MARKET INTEGRATION IN THE EXPERIENCE OF FOOTWEAR MANUFACTURING ENTERPRISES: EVIDENCE FROM MAJOR CITIES IN ETHIOPIA

A Doctoral Research Work Submitted to Gelila International Seminary in Partial Fulfilment of the Requirement for the Doctor of Philosophy Degree in Christian Leadership and Management

BY YONATAN JERENE DARIE
ADVISER: PROF. SAMUEL TADESSE

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DECLARATION

This research work has not been previously accepted for any degree and is not being currently submitted as a candidate for any degree in any academic institution. I declare that this research is a result of my investigation, except where otherwise stated, I have undertaken the study independently with the guidance and support of my research adviser. Other sources are acknowledged by citations giving explicit references. A list of references is appended.

Signature of the researcher…….
Yonatan Jerene

This research work has been submitted for examination with my approval as an adviser.

Signature of the adviser……
Prof. Samuel Tadesse

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"HA UBBAN, YESUUSI GODA!"
(All the way, Jesus is the Lord!)
Yonatan Jerene, Darie.

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LIST OF ACRONYMS

ADB-Asian Development Bank
B2B-Business-to-Business
C2C-Cash-to-Cash
CSA-Central Statistics Authority
EBIT-Earnings before income tax
EDI-Electronic Data Interchange
EPRDF-Ethiopian People's Revolutionary Democratic Front
ERP-Enterprise Resource Planning
ETB-Ethiopian Birr
FAO-Farm and Agricultural Organization
FeMSEDA- the Federal Micro and Small Enterprises Development Agency
GoE-Government of Ethiopia
GTP-Growth and Transformation Plan
IFPRI-International Food and Policy Research Institute
ILO-International Labour Organization
MSEs-Micro and Small Enterprises
MSMEs-Micro, Small and Medium Enterprises
OECD-Organization for Economic Co-operation and Development
OSSs-One Stop Service Centres
PASDEP-Poverty Alleviating and Sustainable Development Economic Program
RCA-Revealed Comparative Advantage
ReMSEDAs- the Regional Micro and Small Enterprises Development Agency
SAO-Service Oriented Architect
SOEs-State Owned Enterprises
TVET-Technical, Vocational Education and Training
UNDP-United Nations Development Program
USD-United States Dollar
WB-The World Bank
WFP-World Food Program
WTO-World Trade Organization

A B S T R A C T

This research aimed to examine the extent of market integration in the experience of footwear manufacturing enterprises in Addis Ababa, Bahir Dar, and Hawassa. The theoretical analysis of scientific literature and statistical data for the period 2010-2015 from the central statistical authority of Ethiopia was an important part of the research methodology. The researcher has applied the cointegration approach which can be termed as cointegration and vector error correction models (VECMs) to identify the degree of integration, adjustment speed, and asymmetry in price relationships together with impulse response functions. It proves the existence and extent of market integration for the footwear manufacturing enterprises in Ethiopia. The findings show that there is relative market efficiency basically between Addis Ababa and Hawassa. The relationship between Addis Ababa and Bahir Dar as well as Hawassa and Bahir Dar are insignificant. Even though there is relative market efficiency between Addis Ababa and Hawassa, the 52% price convergence takes at least ten months between the two markets. The transfer from Addis Ababa and Hawassa to Bahir Dar is almost none. Addis Ababa could have played a lead role in cause-effect relationships, the reverse is true for the relationship between Addis Ababa and the remaining sample market centers of this study. Even though there is a lead role of Addis Ababa over Hawassa and Bahir Dar the later ones have the same roles over Addis Ababa which needs further investigation. The other important outcome is that more than 90% of enterprises are concentrated in Addis Ababa during the study period. However, the sector has irreplaceable roles in the development of the country in terms of creating job opportunities, containing rural-urban labor migration, bringing foreign currencies, and comprehensive developmental contributions. Favorable policy situations, apart from peace and stability, are crucial for improving efficiency through reducing transaction and transport costs which can advance the roles of enterprises in nation development. The findings of the study are believed to contribute to the understanding of the connections among markets in the three areas and can spotlight the roles policies and commitments of the enterprises to use the available resources.

K E Y W O R D S

Market integration, Manufactures, Enterprises, Price convergence

CHAPTER ONE

1. INTRODUCTION

Poor market integration typically weakens the business potential of private sectors (Gebreeyesus, M. 2016; Kishana A., 2004), particularly micro, small, and medium enterprises which are usually termed Enterprises. Lack of market integration negatively affects the enterprises for their market expansion and then, hinders their advancement into their higher careers. For this reason, many scholars in the stream and development agencies suggest that reforms should specifically focus on these enterprises to expand market facilities including integrations. This is because manufacturing typically provides a substantial collective contribution to the national accounts in developing and developed countries (Hailai A. Weldeslassie, et. al, 2019). By improving the market integration of enterprises, the growth opportunities for these firms should increase not only just the sector but also help the overall economy in the form of creating job opportunities and as a credible source of income and means of livelihood for a large segment of the community in the lower edge of the economy and living status. However, while this logic makes intuitive sense, the roles of market environment reform and its impact on enterprise integration, economic growth, and poverty reduction are more complex.

This research intends to spotlight on the extent and effects of market integration on manufacturing enterprises in Ethiopian economies and considers the roles development agencies and policymakers can play to support this. It reviews the published pieces of literature on this topic from policy and practice points and surveys the facts on the ground about their business expansion through market integration.

1.1. BACKGROUND OF THE STUDY

Policy instruments can insulate the markets and hinder the full transmission of price signals by affecting the excess demand or supply schedules of commodity markets (Baffes, 2001). Apart from policies, markets can also be partly insulated by large marketing margins that arise due to high transfer costs. High transfer costs and marketing margins hinder the transmission of price signals, as they may prohibit arbitrage (Donald L. Sexton, 1991). Producer marketing decisions are based on market price information, and poorly integrated markets may convey inaccurate price information, leading to inefficient product movements. Linkages to marketing

centers have been found to contribute significantly to household's escape from poverty (Kishana, A., et.al, 2004; Kishana A., 2004)

Despite their significant contribution to the economy, enterprises face serious challenges. According to scholars (Hallberg, 1999; Ishengoma, 2006; Muma, 2002), this sector is often referred to as small businesses with big problems. Sector type is an important determinant of enterprise growth as different sectors face different product demands and encounter various cost structures on the supply side (Liedholm, 1999). A second variable likely to affect the growth of existing enterprises is location. Complementary enterprises grouped close together or located close to the final demand sources (get integrated) might be expected to grow more rapidly than their more isolated counterparts (Arimah, 2001; Harding, 2002). Empirical evidence from Africa has indicated that urban enterprises typically grow more rapidly than their rural-based counterparts because of their location (Kolvereid, 2006) argues that various socioeconomic variables influence enterprise growth. Increases in "human capital" through increases in the experience or education of the entrepreneur lead to enterprise growth. In addition to "human capital", proprietor gender is also thought to be an important determinant of enterprise growth. Blackman (Blackman, 2000; Liedholm, 1999), for instance, posits that female entrepreneurs in Africa are more risk averse and thus less likely to grow than their male counterparts. The overall socio-economic and political situation in a country is a key determinant in the growth of small businesses. Solymossy and Penna (Solymossy, 2000) and Ivey Russel (Russel, 1997) grouped problems of enterprises into five clusters: Finance, government rules, marketing, labor, equipment, and infrastructure as the most critical problems.

As the pioneer practice in most developing countries, the government of Ethiopia has been carrying a labor force engagement approach with key attention to ensuring job availability to the citizens who seek jobs in different thematic areas. One of the approaches that have been implemented in Ethiopia is engaging job seekers in the forms of enterprises which are categorized as micro and small and later could be advanced into medium and large enterprises. Once they reach the level of large, they are considered as large market entities with capabilities to invest in their areas as the private sector role players.

The Ethiopian Industrial Policy and Development Review (Gebreeyesus, M. 2013) provides a broad and historical account of industrial policies and performance in Ethiopia and tells Ethiopia is one of few African countries that has formulated a full-fledged industrial policy and aggressively pursued over the last two decades even though it remains among the world's poorest countries where agriculture employs 85% of labor force and the industry's contribution to the economy remains at about 14%, far below the average SSA countries.

A conscious move to stimulate industrial growth in Ethiopia began in the mid-1950s with the formulation of the First Five-Year Plan (FFYP). In keeping with the political ideologies governing the economic principles of the time, successive governments adopted different policies for the development of industry in Ethiopia where manufacturing enterprises are the major components.

The first implemented promotion of industrial development was the FFYP which covered the period 1958–62 (Imperial Government of Ethiopia, 1973). The plan envisaged achieving industrial progress through substituting imports with the development of light industry producing consumer goods for the domestic market. The cottage and handicraft sectors were recognized in the plan as playing an important role in the development of the manufacturing industry in the country. Two more five-year plans, the Second Five-Year Plan and the Third Five-Year Plan, were launched between 1963 and 1973. Implementation of these initiatives envisaged in the three successive five-year plans (1958–73) attracted foreign investors and boosted the manufacturing sector. However, by the end of the plan period, the overall industrial base of the country had remained weak (The World Bank, 1985).

The military government (1974) nationalized most of the medium and large manufacturing enterprises and declared ‘a socialist economic policy’ (PMAC, 1975). Industrial activities were reserved exclusively for the state. As a result, the manufacturing sector exhibited a sharp decline, particularly in the first few years. The government had no industrial policy per se until the mid-1980s. A Ten-year Perspective Plan comprising a macroeconomic framework—a Public Investment Programme containing an indicative portfolio of projects and production targets for the period 1984/85–1993/94—was formulated. According to the World Bank (1985), the industrial sector was envisaged to grow at 15.4% per annum over the planned period, which was three times the planned growth of the agriculture sector. The nationalization

and continued systematic restriction of the private sector from engaging in major economic activities had reduced the emerging vibrant sector into micro- and small-scale manufacturing activities. In 1985/86, one decade after the revolution, state-owned enterprises (SOEs) generated 95% of the value added and 93% of the employment of all Medium and Large-Scale Manufacturing (MLSM) enterprises as discussed by Mulu Gebreeyesus (Aug. 2016). Towards the end of the 1980s, the SOEs' financial position weakened, and government subsidies and overdraft facilities became instrumental in their survival (UNIDO, 1991). Because of the poor quality of products and lack of, as indicated by the same scholar, experience in export markets, only 6% of the total value of industrial output was exported by SOEs. During the last years of the Dergue regime, there was a sharp decline in the Ethiopian economy, particularly in the manufacturing sector. The growth of manufacturing value added started to fall in 1988 and reached 40% in 1991 (The World Bank, 2010). The industry value added at large had also exhibited a similar trend over this period. Policies hostile to the private sector coupled with substantial inefficiency in the public sector were the main causes of this decline.

The first decade of the EPRDF regime (1991–9) was marked by a series of reforms under the structural adjustment program (SAP) to reverse the command economic system by way of fostering competition, opening up the economy, and promoting the private sector. The first phase of the structural and economic reform programs took place during 1992/93–1994/95. A key measure undertaken during this period was liberalization in various markets. The second phase of the economic reform program (1994/95–1996/97) was aimed at limiting the role of the state in economic activity and the promotion of greater private capital participation. In 1996 the country entered a three-year Enhanced Structural Adjustment Facility (ESAF) arrangement with the IMF and began the third phase of the reform program spanning the period 1996/97–1998/99. while the liberalization measures were further strengthened. The relatively favorable policy environment created by the economic reforms, coupled with macroeconomic stability, revitalized the manufacturing sector and the economy at large. The high growth period did not last long, however. The value-added growth of the industry and the manufacturing sector in the period 1996–2003 averaged only 5 and 3 percent per annum respectively, which is modest in comparison with preceding years. In 2002/03, the Ethiopian government formulated a full-fledged Industrial Development Strategy (IDS). The IDS was linked to various sub-sector strategies and to successive development plans such as the Sustainable Development and Poverty Reduction Program (SDPRP) 2002/03–2004/05 and the Plan of Action for Sustainable

Development and Eradication of Poverty (PASDEP) 2005/06–2009/10. The industrial sector and the economy at large have shown impressive growth following the implementation of the PASDEP. Based on the 2001–2 report, the cottage/handicraft sector was estimated to comprise a total number of 974,676 establishments generating employment for above 1.3 million people in 2001–2. The dominant activities in this sector were the food and beverage, textile, and non-metallic mineral products combined, accounting for 86 percent of total cottage/handicraft establishments. About 63.2 percent was located in rural areas with the remaining 36.8 in towns. In contrast, there were only 31,863 SSM and 909 MLSM establishments employing respectively 97,781 and 98,986 people in that year. The cottage/handicraft industry thus accounted for about 97 percent and 87 percent of the total number of manufacturing enterprises and employment respectively. On the other hand, in terms of value-added the cottage/handicraft sector contribution was only 21.5 per cent.

The Ethiopian manufacturing sector is dominated by small and micro-firms (Gebreeyesus, M. 2013). In 2007/08, for example, 43,338 (96%) of the 45,268 manufacturing establishments that use power-driven machinery were micro-firms employing fewer than ten people. Regarding trade orientation, the volume of manufactured exports from Ethiopia is low. The leather, textile, and apparel sectors have the highest participation rates. The export-to-sales ratio is also correspondingly small as indicated by the same scholar. For example, in 2010, the average share of exports in total sales of the MLSM sector was only 3 percent. This is much lower than in previous years. The export-to-sales ratio has also declined in the three most important export sectors—leather, apparel, and textile sectors—during the period 2003/4 and 2009/10.

As we can understand from the above discussions, the industrial/manufacturing sector in Ethiopia has been categorized into three: Cottage/Handicraft sector, small-scale manufacturing (SSM) sector, and Medium and Large-Scale Manufacturing (MLSM). This categorization worked until 2003 when the EPRDF regime revised it into Micro, Small, Medium, and Large Enterprises. The 2003 IDS declared priority sectors for government direct support which included textile and garment; meat, leather, and leather products; other agro-processing industries (e.g. sugar and sugar-related industries); construction industry; and the micro- and small enterprises (MSEs). The list of priority sectors has been updated over time. To meet its targets, the government provided extensive support, including economic incentives (credit, land, and duty and tax exemption), capacity building, and direct public investment. Textile and

leather are the two preferred industries receiving the most attention from Ethiopian policymakers for export promotion. Until 25 years ago, the Ethiopian economy was state-led and the private sector was, to all intents and purposes, non-existent. There were also no state policies to support the enterprise sector, although the former Handicraft and Small-Scale Development Agency (HASIDA) was responsible for supporting handicrafts and small-scale industries, and especially the development of cooperatives along socialist lines, with branch offices in major towns and provinces across the country. Since then, the GoE has recognized the role of the manufacturing sector, especially in the context of stimulating employment, the pre-eminent economic concern. Today, various policy frameworks connect with manufacturing sector development, the key one being the Micro and Small Enterprise (MSE) Development Strategy. The GoE formulated the first MSE Development Strategy in 1997, including establishing institutions to implement it. The current MSE Strategy was revised in 2011 and then in 2016 and 2019 to address some of the perceived weaknesses, such as lack of plan, resources, monitoring and evaluation, coordination, etc. The vision of the current MSE Development Strategy is "to create a competitive and convenient base for industrial development." The revised strategy sought to coordinate and develop manufacturing enterprises specifically to support employment creation as a means to reduce poverty. It included various other elements, such as focusing on enterprises that export/substitute imports, while prioritizing labor-intensive manufacturing, construction, trade, and agricultural sub-sectors with the potential to create major job opportunities.

Understanding the processes being applied and the level of enterprise advancement in recent Ethiopia can give a clear picture of the sector and how it has been operating in the economy. The intention of organizing citizens into micro-enterprises is expected to allow the engagers to create a certain level of capital/resources which can be considered as initial/start-up capital so that they can move to the next level by accessing other resources including fetching loans from micro financial institutions. Once they decide to engage in the market with definitional levels of small and then medium, they are believed to hold a certain higher level of capital as well several jobs would be created by them. Similarly, once they have crossed these levels and indulge in large-scale levels, they are accepted as investors who are more independent in terms of the amount that they may want to mobilize from any available sources while assuming to create ample job opportunities and foreign currency earnings for the national economy.

To be clearer with the official definition of micro, small, medium, and large enterprises, we need to refer to the job creation and food security policies devised and applied by the government sectors including the Agency for Food Security and Job Creation, Agency for Micro and Small Enterprises Development and Federal Jobs Creation Commission of Ethiopia. The same reference to the Ministry of Trade and Industry is an important source of information about the nature and situations of the enterprises in the country, Ethiopia.

The MSE development policy and strategies of the government of Ethiopia (edited 2016) define micro and small enterprises under three major categories, small, and medium. After identifying the limitations of the previous definitions and reviewing international experiences, the definition of MSEs was revised in 2016 under the Ministry of Urban Development and Construction. A new set of definitions is provided that takes into consideration the number of employed workers, total assets, and two broad sectoral classifications (industry and service) as well as considering inflation and exchange rate-related changes that might occur over the following five years.

The revised definition considers enterprises employing up to 5 persons including the enterprise owners and family members, with total assets of not more than ETB 100,000 (USD 4,630) as micro-enterprises. Sector-wise, for the industrial sector (including manufacturing, construction, and mining), enterprises employing a maximum of five persons, including the enterprise owners and family members, with a total asset of not more than ETB 100,000 (USD 4,630); while for the service sector (retail trade, transport, hotel, tourism, and information technology and maintenance services), enterprises employing a maximum of five persons, including the enterprise owners and family members, with a total asset of not more than ETB 50,000 (USD 2,310) are considered as micro-enterprises.

The revised definition of small enterprises for the industrial sector (manufacturing, construction and mining) refers to enterprises employing 6-30 persons and with a total asset of from ETB 100,001 up to ETB 1,500,000 (USD 4,630 up to USD 69,500); and for the service sector (retail trade, transport, hotel, tourism, and information technology and maintenance services) it refers to enterprises that are employing 6-30 persons, and with total asset of at least ETB 50,001 and up to ETB 500,000 (USD 2,310 up to USD 23,150). According to the regulation No. 373/2016: Federal Small and Medium Manufacturing Industry Development

Agency Establishment Council of Ministers Regulation Page 8816, medium manufacturing industry" means an industry having a total capital, excluding building, from Birr 1,500,001 to Birr 20,000,000 (One Million Five Hundred Thousand One Birr to Twenty Million Birr) in the manufacturing sector and engages from 31 to 100 workers including the owner, his family members and other employees.

1.2. PROBLEM STATEMENT

In recognition of the vital role enterprises play in the country's economic and social development, significant attention has been paid to the government of the Federal Democratic Republic of Ethiopia (GoE) for its advancement. The major aims of the Enterprise Development Policy and Strategy are to build further the gains achieved to date, fulfill the objectives of the Growth and Transformation Plan (GTP) as well and attain MSME development targets set by GoE, as indicated in the 2019 revised version of the strategy.

Experience shows that, while many Enterprise start-ups may survive, many others fail in a few years leaving only a small percentage to grow into medium and large enterprises. Nevertheless, manufacturing operators still serve as the most important pool of growth-oriented investors engaged in developing entrepreneurial attitudes and skills. If, for example, there are half a million enterprises emerge in an economy, and 99% are not able to develop into medium or large enterprises or fail, this still means that 1%, which is about 5,000 enterprises become medium-sized ones, and eventually may become large scale markets. This tells that enterprises should be recognized as incubators of developmental investors, as the way it is considered by the government of Ethiopia. This rationale is not limited to low-income countries like Ethiopia but also holds in high-income industrialized countries (Vandenberg, 2009).

Although, as indicated in the revised enterprises development policy document of 2019, several challenges inhibit the development of manufacturing enterprises in Ethiopia. The critical problems are attached to rent-seeking behaviors, which manifest themselves in different forms. Other challenges that undermine the growth of enterprises are lack of access to technology, skills, capital financing, and markets. The generally negative attitude towards enterprises is the core challenge and takes different manifestations, including lack of knowledge about the potential of enterprises; the attitude that considers engagement in enterprises as a sign of poverty and backwardness discounts their potential role because of the narrow perspective - their size and use of simple technologies, compared to their operations

and potential. Preference for paid employment is another pivotal challenge the sector faces in Ethiopia and beyond. Most of the graduates from Ethiopia's higher education and technical and vocational training (TVET) institutions seek paid employment rather than an entrepreneurial path. Dependency syndrome is another most common and is expressed in an expectation of receiving subsidies and charity rather than working and investing in one's future. Inadequate start-up capital is another major constraint most enterprises face during their establishment. It is caused partly by operators who lack the confidence to use their savings to start a market and persevere through hard work. On the other hand, there is evidence that loans can serve as start-up capital not being fully utilized and this indicates problems in enterprises' limited capacity to absorb available funds.

The market-related constraints for enterprises' products and services are another serious area of concern. Among the factors that explain marketing-related challenges include examples of MSEs who have made products or provided services without identifying customers' needs through market surveys, use weak marketing strategies, and are reluctant to take the initiative to expand their market access. Measures to promote market linkages between enterprises and purchasers of goods and services need to be accorded proper attention.

Modalities (Hussain, 2000) and mechanisms through which enterprises could forge horizontal links between themselves and vertical linkages with larger manufacturing and service industries for increased market access, enhanced investment flows, skills development, and technological advancements. Such linkages would help overcome the constraints that currently plague the industry in African countries and Ethiopia, particularly. As the global economy becomes more integrated and economic reforms and liberalization take root in Africa, domestic enterprises will have to network and build alliances to be able to survive and compete effectively. There is strong evidence that forming alliances, clustering, and networking help firms to compete, grow, and cooperate with large firms. By working together, firms can gain the benefits of collective efficiency, enabling them to link with larger producers and break into national and global markets. The key to success seems to be a customer-oriented focus, a mutually supportive approach, and a cumulative effort to ensure continuous, rather than discrete improvements. While enterprises in Africa remain largely underdeveloped and isolated, enterprises in Mauritius illustrate the various forms of linkages that can be forged

especially clustering in the Export Processing Zone (EPZ). Vertical integration in the textile industry in Mauritius also stands out as an interesting and successful example.

Enterprise associations (ILO, 2009) can be a valuable support mechanism for markets during the downturn. They allow members to share ideas and knowledge, provide information on new policies and programs, and advocate on behalf of their members vis-à-vis governments. The effectiveness of such organizations varies considerably, depending on the ability to attract members, the level of funding, and the leadership and management. The Federation of Small Markets in the U.K. and the Canadian Federation of Independent Markets are two of the many effective organizations around the world. Unfortunately, many small market associations are less effective, and thus the voice of entrepreneurs is often inaudible.

A review of the literature on industry value chains in Ethiopia indicates that the businesses face many challenges due to limited market outlets, limited efforts in market linkage, and poor market information among actors; (Birhanu, 2007; Shibeshi, 2008)). The study done by Mamo (Mamo Girma, 2009) argues that dispersed and unorganized producers are unlikely to exploit market opportunities as they cannot attain the necessary economies of scale and lack bargaining power in negotiating prices.

Evidence of the level and intensity of market integration tells the type of support that can be accorded by private and public sectors. Identifying the type of market integration, if it exists, dictates the type and extent of policy support that can be provided. The existence of potential market co-movement tells that there is either absolute or relative market integration which needs separate types of interventions from a policy intervention point of view. The interventions can be either from financial services facilitation supply side market supports or a mix of the two considering the type and level of integration. As most of the policy interventions can fall under either of the two items indicated in this section, revealing the facts of market integration among the enterprises can help resolve most of the challenges encountered in the sector. This is the driving factor and most rationale for this research work.

1.3. OBJECTIVES

1.3.1. GENERAL OBJECTIVE

The general objective of this research is to spotlight the extent and effects of market integration among manufacturing enterprises in distinctive market areas in Ethiopia. The general objective is broken into three specifics.

1.3.2. SPECIFIC OBJECTIVES

1. To assess the extent to which the market of private sectors in the form of footwear manufacturing enterprises is integrated.
2. To identify major market integration challenges private sectors in the form of footwear manufacturing enterprises face.
3. To recommend policy solutions for addressing barriers that hinder manufacturing enterprises from achieving their market dividends.

1.4. RESEARCH QUESTIONS

In attaining specific objectives, the major questions raised and addressed are:

1.4.1. To what degree are Addis Ababa, Hawassa, and Bahir Dar's footwear manufacturing businesses integrated?

1.4.2. How much and in which direction does one market influence the other?

1.4.3. Based on the response data gathered by the CSA during the research period, which market integration determinants are most important?

1.4.4. What are the main obstacles that need to be addressed for Ethiopian businesses to truly integrate into the market?

1.5. SCOPE OF THE STUDY

The scope of this study is limited to assessing the extent of market integration among footwear manufacturing enterprises in sampled primary urban centers in Ethiopia, specifically, Addis Ababa, Hawassa, and Bahir Dar towns. It assesses market integration by reviewing the data collected by CSA and published literature concerning policy formulation and its application. Primary data was accessed from the Ethiopian Central Statistical Authority (CSA) for six consecutive years which went from 2010 to 2015. It considers national-level official definitions of standard industry classification for products applied by the CSA unless the mere comparison is done for literature review purposes. The scope of this study is limited to six years of phenomena for literature review and response data collected for this analysis from

CSA. It will explore the extent of market integration among target market areas and its contribution to market expansion in terms of volume and trend of the market share and economic contribution. The analysis for market share depends on the coefficients of the three markets for footwear manufacturers. The three important issues addressed through this study are the existence of market integration, the extent of market integration between/among the markets identified and basic challenges as a base for policy recommendations. The study has drawn the market integration bottlenecks by analyzing and triangulating the response data/information gathered by the CSA for the period considered in this study.

1.6. SIGNIFICANCE OF THE STUDY

Market integration is important for enterprises in developing countries that are trying to connect to larger international markets. The degree of price transmission is also vital in understanding the impact of spatial price spikes on different markets, locally. If there is a negligible degree of integration, local consumers will hardly be affected by price shocks in other markets. Producers are also affected by the degree of market integration since they base their production decisions on expected and observed price levels. A low degree of price transmission, caused by trade policy or due to transaction costs caused by a lack of physical and communication infrastructure, reduces the price information available to economic agents. Incomplete information could potentially lead to inefficient market outcomes. Contentious issues, such as trade liberalization and the distribution of costs and benefits across societies, are thus fundamentally affected by the degree of market integration. Hence this concept must be properly understood to develop effective policy.

Even if this study concentrates on data collected from certain primary-level urban centers of Ethiopia and for a maximum of six consecutive years, its findings can be inferred for the situation in, at least, similar-level urban centers and beyond. Specifically, the public sectors engaged in policy formulation for stimulating manufacturing enterprises for economic advancement and expansion of job opportunities which includes the Federal Ministry of Labor and Skills, Federal Ministry of Social, Women and Children as well as Federal Trade and Regional Integration can benefit significantly from this study. Similarly, academicians and higher educational institutions can boldly benefit from this study.

1.7. LIMITATION OF THE STUDY

It is known that all studies are based on data from samples. Due to resource constraints and lack of data at the national level, this study is limited to the level of its affordability. Though this study is based on data from CSA and only for six years the model we apply needs a vast number of data and observations. Similarly, the model applied in this study has its deficiency where there is a data quality problem in terms of obtaining complete data for the selected sector price and products. As was discussed in detail in the previous paragraph, price transmission between markets is not necessarily complete under real-world conditions. On the contrary, complete transmission is somewhat of a rarity in the real world, especially in developing countries. Even though all the necessary corrective majors were carried out, it may have some effects in terms of interpreting actual market integration levels. Specifically, non-stationary transaction costs and sub-par data are problematic when applying co-integration which is addressed by applying appropriate corrective actions.

1.8. DELIMITATION OF THE STUDY

This study is limited to the extent of exploring the level of integration concerning the market factors. It focuses on demand and supply-related interactions among footwear manufacturing enterprises in selected primary urban centers. The study observes the volume of market shares possessed by well-integrated enterprises and vice-versa. It sees the level of integration among the footwear manufacturing enterprises in Addis Ababa, Hawassa, and Bahir Dar. Moreover, this research work uses the three variant terms of enterprises interchangeably. They are termed as Enterprises (Small, Medium, and Large Enterprises).

1.9. ORGANIZATION

This study is organized in five chapters. Chapter One is about the introduction, background of the study, objectives and well as research questions, and significance of the study. Chapter two addresses the definition of key concepts as well as the conceptual framework on which the study relied. Chapter Three focuses on the methodology and model specification while Chapter Four is about data analysis, and the Conclusion and recommendations are considered under Chapter Five.

CHAPTER TWO

2. CONCEPTS AND THEORETICAL FRAMEWORK

This section highlights the existing literature related to the research topic under investigation. The section summarizes the conceptualization and theoretical framework of the research domain. It highlights major theoretical thoughts of market integration; and frameworks enterprises have been operating in Ethiopia. The section summarizes the practices of market integration in Ethiopia from an enterprise perspective and reviews major challenges and lessons learned while applying sector-specific policies and strategies in Ethiopia.

2.1. CONCEPT OF MARKET INTEGRATION

The study done by scholars (Diana, R. C. and Codreanu, 2009) referred to tells the benefits of market integration not only for certain segments of the economy but also for the advancement of innovation, information, and communication technologies. The role of IT is indicated by scholars for market integration as it eases the process of information circulation. Because of IT advancements, processes, and supply chains become visible from end to end, market activities can be closely monitored to provide an early alert to potential problems, and rules and workflow can be built in to provide greater control. As is clearly stated by Radut C. and Coderanu D., the benefits of market integration include, among many, improved customer service, minimized cost, and increased profits. The scholars conclude their findings by saying that without the ability to easily exchange data and integrate it into back-office systems, the markets are forced to rely on costly, error-prone manual processes that affect market agility. A reluctance to adopt new standards and practices will drastically affect their ability to trade in the drastically changing global scenario. A writer (Diana, May 2009) described market integration as when two markets are brought together through a merger or takeover. It is possible to define the nature and type of integration based on the activities of each market and where they operate in the supply chain of the economy. That can be described as four types: backward vertical integration, conglomerate integration, forward vertical integration, and horizontal integration. Backward vertical integration involves acquiring a market operating earlier in the supply chain–e.g. a retailer buys a wholesaler, a brewer buys a hop farm. Conglomeration integration involves a combination of firms that are involved in unrelated market activities; forward vertical integration involves acquiring a market further up in the supply chain – e.g. a vehicle manufacturer buys a car parts distributor while in horizontal

integration markets in the same industry and which operates at the same stage of the production process are combined.

Market integration is driving present-day organizations and is a key catalyst for growth. It allows organizations to leverage their existing processes, people, technology, and information to stay ahead of the competition. On the other hand, markets that are not integrated often complain about significant cost increases and resource consumption. An integrated system will not only reduce the energy consumption of the organization but will also allow for drilling down into valuable customer data. Therefore, today's organizations are integrating with different platforms to bridge the gap between multiple market functions. The same online source indicates five benefits of market integration for our market: improved data accessibility, better communication, improved productivity, one-stop service, and robust growth.

Price transmission from the world to domestic markets is central to understanding the extent of the integration of economic agents into the market process (George R, et.al, 2004). This tells us that a high level of market integration among market agents leads to high dependence on one another. The referred research document done by George R. et al states that the absence of market integration, or complete pass-through of price changes from one market to another has important implications for economic welfare. Incomplete price transmission arising either due to trade and other policies or due to transaction costs such as poor transport and communication infrastructure, results in a reduction in the price information available to economic agents and consequently may lead to decisions that contribute to inefficient outcomes. It tells us that market integration is a tool for efficient market outcomes.

As for the importance of market integration, scholars state markets are important determinants of goods and services availability and accessibility. The extent to which markets make products/goods available and keep prices stable depends on whether markets are integrated. According to the study carried out by WFP (WFP, PDPE Market Analysis Tools: Market Integration, 2007), integrated markets can be defined as markets in which prices for comparable goods do not behave independently. If markets are well integrated, it can be assumed that market forces are working properly, meaning that price changes in one location are consistently related to price changes in other locations, and market agents can interact between different markets. If markets are integrated, products/services will flow from surplus

to deficit areas - and imports will flow from port and border areas into the hinterland. High prices in deficit areas provide the incentive to traders to bring products/services from surplus, making products available. As a result of these flows, prices should decline in deficit areas, making products/services more accessible to households. The same study tells that Prices usually give important indications on whether markets are integrated. Markets are integrated if prices among different locations move in similar patterns, given that the differences between prices are explained by the transfer and transaction costs as products/services flow between the locations. Otherwise, markets are segmented. This could, for example, be a result of prohibitive transaction costs related to poor infrastructure in remote areas or damaged roads or bridges because of a disaster.

As cited by Honfoga et al. (Barthélemy Honfoga, et.al, 2018), market integration means the strength of trading networks that link different market outlets, i.e., market sheds (M., 2010). The term market-shed is used to give the sense of a system or network of market flows within a given area e.g., it is not just a zone with some markets located in it, but rather, it is a trading network with links between market outlets (Anderson CL, 2010). Therefore, two markets are said to be integrated for a given commodity if prices move together, i.e., price movements tend to behave similarly, reflecting the cost of transferring the product between two regions (Rashid, 2010), (Hossain, 2010). World Food Program made this definition more explicit as it affirmed that when markets are integrated, two conditions exist: (a) prices are correlated, i.e., they move in tandem with one another, but at different levels that are determined by transaction costs (necessary yet insufficient condition of market integration); (b) commodities flow between markets, i.e., markets are integrated through trade, which triggers price transmission from one market to another (necessary and sufficient condition of market integration).

2.2. THEORETICAL FRAMEWORK OF MARKET INTEGRATION

Studies (SIVAKUMARAN, 2011) explain a market system can be considered integrated when linkages between local, regional, and national actors are working well. In simple terms, the researcher says market integration assesses how well goods flow between markets, particularly between surplus and deficit areas. In an integrated market system, any imbalance of supply and demand in one area is compensated for by the relatively easy movement of goods from other nearby or regional markets. There is therefore a re-adjustment possibility, and goods flow from one place to the other at various speeds, with prices reflecting the fair costs of transport and no further distortions could be reflected as transaction costs. Absolute market integration

refers to the situation where a price change in one geographically different market (for good X) is transmitted completely to another geographically different market (for the same good), allowing for transport costs. Thus, what it points to is the degree to which markets are isolated, and therefore the response capacity of markets to accommodate changing flows for example, without affecting prices disproportionately. Market integration can ultimately be seen as a measure of market functionality which can be reflected in purchasing power and/or level of competition; therefore, it is of critical relevance to the choice of intervention strategy. In general, the higher the level of market integration, the more efficient and effective a cash-based strategy is expected to be rather than providing products in kind. Availing financial services is more important than providing marketing support for availing products, even if it can be coupled with financial facility support.

A market analysis methods review done by Rapsomanakis and his team (Rapsomanakis et al, 2003) says that studies on the transmission of price signals are founded on concepts related to competitive pricing behavior. In spatial terms, the classical paradigm of the Law of One Price, as well as the predictions on market integration provided by the standard spatial price determination models (Enke, 1951; Samuelson, 1952; Takayama and Judge, 1972) postulate that price transmission is complete with equilibrium prices of a commodity sold on competitive markets differing only by transfer costs when converted to a common currency. These models predict that changes in supply and demand conditions in one market will affect trade and therefore prices in other markets as equilibrium is restored through spatial arbitrage. The absence of market integration, or complete pass-through of price changes from one market to another has important implications for economic welfare. Incomplete price transmission arising either due to trade and other policies, or due to transaction costs such as poor transport and communication infrastructure which can be termed as relative market integration, results in a reduction in the price information available to economic agents and consequently may lead to decisions that contribute to inefficient outcomes.

Most studies utilize time series econometric analysis techniques that test for co-movement of prices. The development of these techniques, which include cointegration and error correction models, has become the standard tool for analyzing spatial market relationships, replacing earlier empirical tools, such as the bivariate correlation coefficient and regressions. Nevertheless, time series analysis has also been criticized as unreliable (Blauch, 1997; Barrett

and Li, 2002) with recent research focusing on switching regime models that incorporate data on prices, volumes traded, and transaction costs.

The debate on the application methodology for testing market integration and price transmission has a relatively long history starting with Harriss (1979), Blauch (1997) provides a review of the debate and examines the statistical performance of econometric tests for market integration. In essence, linear tests for market integration and price transmission are thought of as crude and inappropriate (Blauch, 1997; McNew, 1996; McNew and Fackler, 1997; Fackler and Goodwin, 2002 Barrett and Li, 2002). Nonlinearities in market relationships that arise from arbitrage conditions, unsynchronized price cycles, discontinuous trade, and non-stationary transfer costs are thought of as rendering linear representations and models not useful and inaccurate.

The analysis done by WFP/PDPE (2007) shows that analyzing market integration is done by comparing prices in different locations. This concept was discussed in a stepwise (five steps) as summarized herewith. The first step assesses whether prices move in tandem or not. One could calculate simple correlation coefficients or plot price series in a graph to check price co-movement. If prices co-move, markets may be integrated. However, high correlation coefficients or price co-movement can be a result of other factors, like a steady increase in all prices, rather than market integration. This leads to checking for outliers - caused by a specific phenomenon in one market- and stability of price series over time. Normally, wholesale prices are preferred to retail prices because it is assumed that traders move large quantities between markets while retailers sell locally. It is important to use either wholesale prices between two markets or only retail prices between two markets, not a combination. Using the same type of price will make it easier to compare transaction costs if we are dealing with price differences. Prices in one region might lag changes in prices in other regions because of the time it takes to react to price differences and move products. But if a common pattern exists, even with some delay, it is usually clear. This step can be represented by a correlation coefficient could also be used to give an idea of the intensity of the co-movement. It is usually computed as:

$$\rho_{MarketA,MarketB} = \frac{\sum_{i=1}^{T} (MarketA_i - \overline{Market\,A}) * (MarketB_i - \overline{Market\,B})}{\sqrt{\sum_{i=1}^{T} (MarketA_i - \overline{Market\,A})2 * (MarketB_i - \overline{Market\,B})2}} \quad \ldots\ldots\ldots\ldots\ldots\ldots 2.1$$

where Market Xi represents the price of the commodity at time i in market X and $\overline{Market}$X= $\frac{1}{T}\sum_{i=1}^{T} MarketX_i$ the average of the prices over the period T in market X. ρ varies between -1 and 1. The closer to 1, the more correlated the prices are and allegedly the better the integration between the markets. The coefficient of correlation is close to 0 when there is no (linear) link between the two sets of prices and therefore presumably no flows between the markets that could regulate the prices through incentives.

As far as checking the stability of prices is concerned, a rapid look at the graph helps identify outlying values (e.g. abnormal prices in one market). Indeed, too many of them could threaten the validity of the tools used in the next steps. An erratic data series might therefore need some stand-alone analysis of the market situation. The stability of a given market relative to a main market (Market '0') can also be measured through the M-coefficient as:

$$\beta_{MarketX=} \frac{Cov\ (MarketX,Market0)}{Var\ (CPI)} = \frac{\frac{1}{T}\sum_{i=1}^{T} (MarketX_i - \overline{Market\ X}) * (Market0_i - \overline{Market\ 0})}{\frac{1}{T}\sum_{i=1}^{T} (MarketX_i - \overline{Market\ X})2} \quad \text{…….2.2}$$

Market '0' refers to prices on a main market that can also be the Consumer Price Index in the country or its product subgroup. If the M-coefficient is 0.8, the prices have varied by approximately 0.8% in the market of interest while the main market prices have varied by 1%. The prices in this market are therefore less volatile than in the main market. An M-coefficient of 0.5 (or 2) means the price in Market X is moving twice as slow (twice as fast) thus indicating a more volatile market.

Step-two analyzes whether prices converge or not, by calculating the average price differences between markets in each period. Convergent markets are integrated markets where prices are at the same level. A zero average suggests absolute convergence, indicating that the markets may be well integrated. A non-zero mean points to the existence of relative convergence, indicating that prices move in tandem, but that there are price differences because of transaction costs. One can derive the average difference as:

$$Diff_{A-B=}\frac{1}{T}\sum_{i=1}^{T} (MarketA_i - MarketB_i) \quad \text{…….2.3}$$

whose sign indicates which market has, on average, higher prices and whose magnitude indicates how important the gap is. A difference close to zero indicates an absolute convergence, i.e. potentially a very good integration between the two markets. A non-null difference tells that there is a relative convergence – which needs more investigation. The

existence of relative convergence tells that there are transaction costs, or barriers like taxes, tariffs, and subsidies. A chart of the price differences over time (rather than the prices themselves) could be helpful. Along this line, one can compute the relative difference to one market to understand what the estimated level of difference represents. Relatively to calculate the market A price level, the difference can be computed as:

$$relativeDiff_A = \frac{\frac{1}{T}\sum_{i=1}^{T}(MarketA_i - MarketB_i)}{MarketA} \quad \text{.....2.4}$$

Step three helps compare spatial price differences with transaction costs, as mentioned above. If transaction costs are higher than the price differences between two markets, it is likely there is no incentive for traders to move the product between these markets at a period that may lead to supply-side shocks. Otherwise, the two markets are likely to be integrated. Thus, from secondary sources, estimates of transportation costs can be useful to explain price differences in the case of relative convergence. These costs may explain market segmentation/not integrated if they are larger than the price differences calculated above because they make it unprofitable for traders to move commodities from one market to another. A simple comparison over time between the transportation costs and the price differences in the chart gives a good idea of the possible incentives for traders.

Step four cross-checks with traders if there is any reason why they might not move product. Among other reasons, it is worth analyzing risk factors such as seasonal product availability and transport hindrances, changes in policy, and security as indicated in the big "cloud of the framework". A rapid check of actual flows between the areas is necessary to derive any conclusions on market integration. Analysis through prices only does not provide all the answers on market integration. Rather, the actual existence of positive trade flows is the only sufficient condition for market integration. Therefore, to the extent possible, traders' interviews enquiring about their willingness to move products and the risks associated, are an extremely useful complement to price integration analysis; and

Step five, finally, helps draw implications for programming and policy response options. If the above steps point towards market integration, the product is available in markets and prices are stable; thus, cash transfers may be an option. If markets are integrated, the effects of additional products on the markets are also likely to be small and temporary. Thus, market integration provides important elements for the response analysis, including whether cash transfers are an option and the design of programs.

Radut Carmen and Codreanu Dian (Diana, Radut Carmen, and Codreanu, 2009) identified that most large markets introduced EDI (Electronic Data Interchange) many years ago to enable them to exchange market critical information electronically with their trading partners. EDI was expected to eliminate the manual processes that result in increased order processing and lead times, human error, and lost information due to incomplete transmissions, mislaid paperwork, and unanswered phone calls. The same scholars said the technology has struggled to fulfill its true potential. The international availability of the Internet, the 'commoditization' of technology, and related universally accepted data structures are transforming the way that data is exchanged, opening the benefits of market integration to all. Moreover, they said in the same study that assessing where your organization is today and identifying where you can make effective changes is an obvious first step to maximizing the benefits to be gained from market integration. They suggest that to reach at best practice, markets can take two main routes- either rely on B2B gateway applications or they can find a trusted partner to provide integration as a service. Developments in technology are undoubtedly making it much easier to benefit from market integration by reducing the traditional barriers to entry previously faced by smaller markets. By employing the correct market integration strategies, organizations can implement solutions that help optimize and support critical market processes. A tight coupling between ERP systems, e-market, and other applications combined with the ability to exchange data in multiple formats with customers, suppliers, and partners leads to a collaborative, market process-based, virtual enterprise. Processes and supply chains become visible from end to end, market activities can be closely monitored to provide an early alert to potential problems, and rules and workflow can be built in to provide greater control.

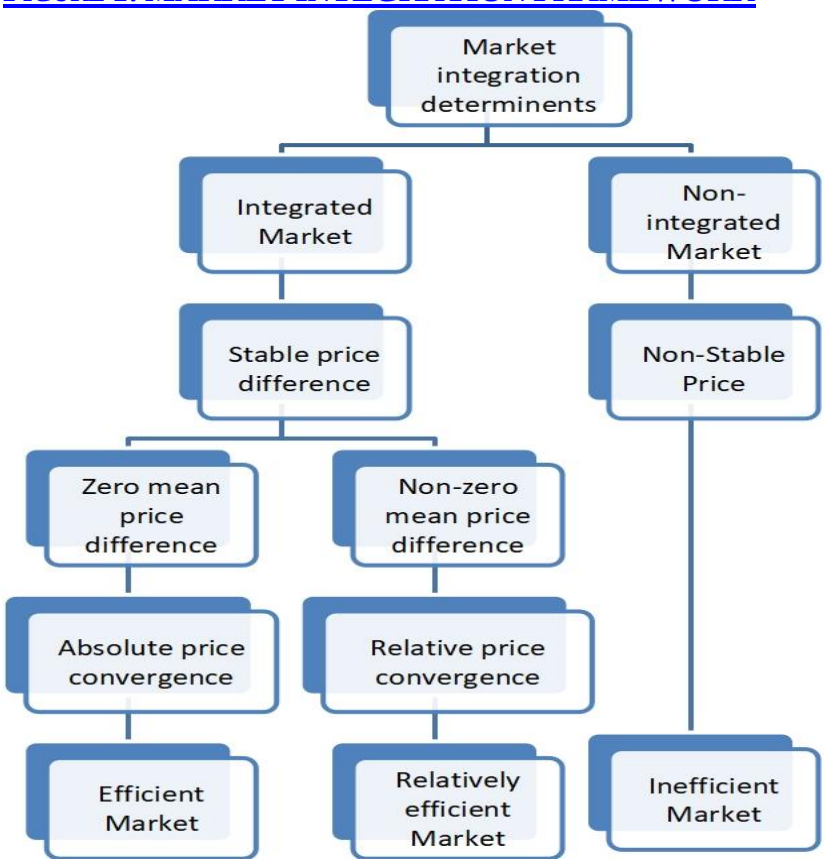
Scholars see that there are two channels of integration market and formal agreements. Nathalie Aminian (Nathalie Aminian, 2008) in their policy research working paper suggests from a purely economic and trade standpoint, the proper sequence of integrations seems to be first integrating via markets and subsequently via formal regional trade agreements the vice versa. The working paper further states that the concept of integration of markets focuses on the idea that economies can integrate among themselves through the use of the marketplace. This can also be described as regional integration via de facto agreements. More concretely, this means that the economies in a region trade intensively among themselves without explicit formal preferential trade agreements. The second core concept the research paper addressed is integration by agreements, which focuses on trade integration via the use of formal or de jure

trade treaties. This channel of integration emphasizes the primacy of legal instruments to further economic integration among countries. There is no doubt that these two instruments of integration are very much related and indeed ultimately, they are complementary. Integration of neighboring markets without formal trade agreements can create uncertainty among markets since the institutional foundations may not be sufficiently clear and transparent. Integration by agreements can be vacuous if the underlying economic factors are not favorable for integration. The paper evaluated the trade integration by calculating the export volume of the regions to the world and calculating the trade intensity index which considers a country's export to a certain country compared to its total export to the world and the world's export to certain country compared to the world's total export. This calculation has helped the scholars to present the trade intensity indices for targeted countries for a year time trade interactions in terms of export transactions among the countries targeted for the research. The same paper tells the use of revealed comparative advantage index calculation to see the advantages of either exporting or importing for certain countries on specific products. As can be seen from the footnote The calculation helps go further and differentiate the RCA index for exports from that for imports. When the RCA index is greater than 1 for exports of components and parts, we can reasonably argue that the economy has a comparative advantage in "processing". When the RCA index is greater than 1 for imports, we say that the economy has a comparative advantage in "assembly" over-processing.

The WFP model which is known as PDPE(WFP,2007), tells us that we have to raise the question "Is there co-movement in prices for certain products between different spatial?" The answer can be either "yes" or "no" by considering three potential determinants of market integration. These are price differences, lack of connection, and market functioning. Price differences can occur due to seasonality, transport cost, transaction cost, and prices of substitutes/complements. Lack of accessibility can indicate physical market accessibility and trade flows within the border or across. Market functionality considers demand aspects (purchasing power), competition/collusion, insecurity, and other aspects. The "yes" answer to the question of price co-movement tells us the existence of potential market integration but can be from one or more of the market integration determinants indicated above. We need to run a simple correlation coefficient calculation to assess the degree of integration. Checking price stability over the period under investigation can tell us if the integration is from price convergence or other determinants, listed above. The second important question to be

addressed following the "yes" for the first question is if the convergence is absolute or relative. In any case, it tells us that the product is available through commercial channels, and there is low inflationary pressure in the market. However, the third question we need to raise at this juncture is the roles of transaction costs like taxes, tariffs, and subsidies. Because of these costs, the convergence will be relative. Fourthly, we have to check for the existence of positive trade flows in the markets which can lead us to apply availing financial services rather than supply-side interventions; and of course, we can couple with the product availing interventions together with the first option. Such policy options need in-depth market analysis which is beyond the scope of this study. If we get the "no" answer for the very first question (price co-movement), it tells us there is no potential market integration. This can happen due to a non-functioning market, non-availability of the product in the market, and/or price variability due to seasonality, transport cost, transaction costs, and/or prices of substitutes/complements. Moreover, no market integration means that the market is segmented which has policy implications of supply-side intervention to increase the product in the market. All the steps described above (Steps 1-5) can be summarized in Figure 1, below as a guiding framework for the implications of his study.

FIGURE 1: MARKET INTEGRATION FRAMEWORK



2.3. INTEGRATION OF ENTERPRISES

Long before a market of any nature starts selling, transacting, and doing market with customers, it must buy from, sell to, transact, and do market with other markets. Establishing trusted market relationships is indeed imperative when it comes to starting a company of any kind. But those market relationships, once established, must be managed effectively – and in the digital world, this means forming digital connections between the suppliers, partners, manufacturers, resellers, and all other organizations a company relies upon and does market within the supply chain. This is precisely why a robust market integration strategy is crucial for business entities/enterprises.

Today, the shape of the market is changing, and this change is being driven by digitization. Today's global market ecosystem both requires and enables companies to digitally connect, communicate, and collaborate with customers, suppliers, partners, service vendors and all other players in the supply chain. Indeed, the modern supply chain has become a digital ecosystem, through which closer collaboration and new joint work practices are made possible. Digitization of supply chains has potentially huge benefits for markets. Research has shown (Goddard, 2019) greater levels of digitization can boost fill rates by up to 80%, and shorten cash-to-cash (C2C) cycle times (i.e. the time between when a company sends cash to suppliers and receives cash from customers), which is shown to lead to greater profitability in 75% of cases. Further research from McKinsey estimates that, on average, companies with highly digitized supply chains can expect to boost their annual growth of EBIT (earnings before interest and taxes) by 3.2% – the largest increase from digitizing any area of the market – and annual revenue growth by 2.3%.

Benefits are indeed clear – but how do companies go about realizing them? It is by market integration (Goddard, 2019). Put simply, market integration (also known as B2B integration, or just B2Bi) refers to the comprehensive digital strategy that enables integration, automation, and optimization of key market processes that connect an organization with its trading partners – customers, suppliers, logistics companies, and financial institutions. It is the collaboration by an organization across a market network of external partners, where all parties exchange and integrate electronic messages, files, and transactions via inter-company market processes. Naturally, market integration relies upon technology solutions to facilitate these exchanges, and in this sense market integration also refers to the technology architecture that enables the collaborative relationships that drive modern supply chains.

The foundations of market integration stem from companies needing a way to exchange information quickly and efficiently. The simple fact of the matter is that in the digital world, faxes and emails do not cut the mustard anymore. But of course, as organizations have moved along their digital transformation journeys, they each have taken their approach to exchanging messages and files with trading partners. However, this results in each market in a supply chain using its distinct blend of applications, cloud resources, and various other systems, all of which rely on differing formats and platforms, and are subject to different security, compliance, and governance considerations. These disparate systems do not necessarily communicate with one another, and it is simply too inefficient and costly to deploy a multitude of solutions to contend with the sheer diversity of communication standards, data formats, and security frameworks each market deals with. Thus, market integration solutions, strategies, and technologies are required to manage the chaos and enable separate companies to seamlessly communicate and exchange market-critical information with each other quickly and efficiently.

The ultimate goal of market integration, then, is to improve the speed and productivity of conducting digital transactions across the supply chain and value chain. In addition, market integration reduces the need for error-prone, costly, and time-consuming manual processes. For example, most companies now receive purchase orders from other markets electronically, often via email. In the past, processing these purchase orders was a manual affair – an employee had to conduct a review, and then manually enter information into an order fulfillment system of some kind. However, with a market integration solution, when the company receives a purchase order, it is automatically reviewed and passed along into the order fulfillment system, minimizing delays for orders being fulfilled. What's more, for the company-submitted purchase order, there is no more uncertainty as to whether or not the order was received, as the market integration system allows the submitting company to view this information and confirm the order is being processed.

Such transparency offers great benefits to markets. From market process management (BPM) to supply chain visibility and global community management, market integration gives companies comprehensive control, ensuring their trading partner operations flow smoothly and efficiently. With market integration, organizations can reduce shipment delays, foresee supply chain bottlenecks, and gain comprehensive visibility via a centralized view of revenue driving B2B processes, enabling more end-to-end responsiveness and better customer service. Beyond

visibility improvements, however, the major benefits of market integration strategies revolve around the collaborative relationships and new work practices that are enabled.

To support any new collaborative market processes, market integration strategies are required that allow for the fast and secure sharing of digital information between all parties in a supply chain ecosystem. Market integration is a hot topic right now, but the truth is that solutions have been around for some time. One early example is EDI (electronic data interchange), which can be traced back to the 1970s. EDI concentrates primarily on the electronic exchange of documents. When solutions first came into being, there were no standards for data formats – when two companies decided that they would electronically exchange information, they would enter into an agreement as to which format, they would use. EDI standards eventually came into play in the 1980s and 90s, and EDI proved to be a massive time-saver for many companies – though it was far from perfect. For starters, organizations had to purchase various hardware and software and train employees to establish and maintain connections. What is more, IT departments had to integrate documents into existing software systems, costing more time and resources.

A bulletin in the case of wholesale prices for teff, wheat, and maize in three main cities: Addis Ababa, Mekelle, and Oromya for the period 2000-2006 (WFP, 2007), shows a good example of how market integration is in Ethiopia. A rapid look at the price movements for wheat shows how Tigray's price evolution was peculiar. When prices in Addis Ababa and Oromiya went up swiftly, Tigray prices increased much less. On the contrary, Tigray experienced two price hikes whereas Addis Ababa prices were increasing more moderately. The correlation coefficients for the different commodities indicated that Addis Ababa and Oromia grain markets were well integrated. Yet, the Addis Ababa and Tigray regions have slightly different price variation patterns. We can therefore assume there was no absolute convergence between the different markets apart for Teff between Addis Ababa and Tigray where price difference is close to 0.

2.4. ENTERPRISES IN THE ETHIOPIAN POLICY FRAMEWORK

Since 2008, economic crises that extended into financial crises have been looming in the world scenario. COVID-19 poses another life-costing challenge to both developed and developing economies in the world. While markets of all sizes have been affected by the crisis, manufacturing enterprises may be hit seriously as the potential of crises can affect weak and small-sized markets as compared to larger ones. The survey carried out by Entrepreneurship

Development Center-Ethiopia (EDC, 2020) on the impact of COVID-19 between April 16 and 24, 2020 tells that the 1.5 million enterprises in the country which employed 4.5 million and generated 40.7 billion (birr) in monthly sales before the partial lockdown have already been closed 37% (with 51% in Oromia). Even before the pandemic hit the ground hard. These firms have laid off about 2.2 million and lost 28.5 billion in monthly sales revenue. Most worrisome, it appears it is the brightest stars—firms with enormous growth potentials—that are burning out fast. For a country with very few private enterprises per capita to begin with and the lowest entrepreneurial activity in Africa, this spells major trouble. Income and jobs from these enterprises, mostly owned by women and youth, sustain about 6.3 million household members. Though the enterprises contribute substantially to output and employment in both developed and developing countries, they have not been well understood at different levels. The ability of countries to limit the layoffs and closures of these enterprises will contribute greatly to the revival of the global economy and of individual national economies. The study carried out by Paul Vandenberg (Vandenberg, 2009) confesses that enterprises employ 33% of formal sector workers in low-income countries and 62% of such workers in high-income countries. As is cited (G, Fekadu, 2015.), in Ethiopia, like any other developing country, enterprises have become an increasingly widespread strategy for its labor intensiveness, suitability to produce more jobs with less capital, utilization of locally available resources, fostering linkage within and among various sectors and resilience to economic shocks.

It is better to understand conceptually what enterprises are as a base for contextualizing their role and identities. One of the main challenges in performing a cross-country analysis of enterprise data is the absence of a universal definition of what constitutes an enterprise. Several efforts aim to streamline and harmonize enterprise definitions (OECD, 2004), although the heterogeneity of enterprises themselves and the nature of the economy they operate in might mean that establishing a global definition is not feasible. A cross-country analysis done by the World Bank (Oya Pinar, et.al, 2011) says the most common definitions used by regulators are based on several employees, sales, and/or loan size. The most common among the three is the number-of-employees criterion. The analysis reveals sixty-eight countries provided information on enterprise definition criteria used by financial regulators and more than 73% of them use the number-of-employees criterion, and 22% out of 50 also use the other two criteria. A total of 60% of regulators use maximum sales value criteria and 22% use maximum loan value criteria to define an enterprise.

According to Paul Vandenberg (2009), the World Bank definition says micro-enterprises: 1–9 employees; small: 10–49 employees; and medium: 50–249 employees. The same scholar indicates in cross-country analysis there were about 365-445 million Enterprises in emerging markets: 25-30 million are formal, 55-70 million are formal micro, and 285-345 million are informal enterprises, globally.

Together with increasing social, environmental, and economic challenges, which have already become a constant component of the social and economic environment of every organization, it is thought that markets play a key role in shifting society towards a more sustainable future (Baumann-Pauly, 2013). The economies of both developed and developing countries are largely based on the activities of enterprises. The SMEs also play a significant role as far as sustainable development is concerned. Policies of different economies/ countries emphasize the fundamental role that enterprises play in the shift towards a new and more sustainable model of production and consumption that can be obtained.

In cognizant of the fact that private sector involvement is important for Ethiopia's economic progress and stability, the Socialist Government introduced a new period in Ethiopian political and economic history (Deneke, 2001) on March 5, 1990. that the private sector could compete with the public sector in all economic sectors. The policy, however, did not last long. Between March 1990 and May 1991, very little implementation of the policy was seen. Later, following the takeover of power by the EPRDF regime in 1991, Solomon Deneke (2001) indicated that the public sector proclamation implied not only the privatization of state-owned enterprises but also the reorientation of the organizations of remaining state-owned enterprises to make them more efficient and profitable. As a result, the same source reveals, that the nine state corporations that dominated the industry before the arrival of the EPRDF regime were dissolved to stimulate domestic and private investments. Thus, a new investment code was released, and privatization agency was set up and the financial sector (banking and insurance market) was liberalized to stimulate investment in the private sector in Ethiopia.

Apart from the promotion of producers' and service providers' cooperatives tried during the Dergue regime with the intention of socialist principles, the concepts of enterprise promotion were not applied in Ethiopia. It was in 1997 that the government of Ethiopia designed a National MSE development and promotion strategy which facilitated and paved the way for

the growth and development of the sector (Berihu Assefa, 2014, p. 74). The primary objective of the strategy was to create a favorable environment for MSEs so that MSEs could facilitate economic growth, create long-term jobs, strengthen cooperation between MSEs, provide the basis for medium and large-scale enterprises, and promote export. In this strategic framework, the government prioritized those enterprises with features of manufacturing and processing various commodities, self-employment, particularly by disabled and unemployed youth, start-ups, and expanding firms owned by women, etc. The research paper done by Birhanu Assefa, et.al (2014, 2) reveals that following the 1997 MSEs Development Strategy, FeMSEDA was established by the Council of Ministers' regulation number 33/1998 to regulate Ethiopia's MSE development. The agency was established as a government institution under the supervision of the Ministry of Urban Development and Construction. The primary goal of the agency was to implement meticulously the strategies mentioned above. Similarly, to implement the MSE policies and strategies, Regional Micro and Small Enterprise Development Agencies (ReMSEDAs) established another downward branch office at district levels.

The work of Birhanu et.al (2014) tells that the industrial development strategy which was devised in 2002 with roots on principles that ultimately would deliver PASDEP, export promotion, and development and expansion of labor-intensive industries, had a large part of MSE development agendas. The drivers of the whole process would be enterprises engaged in the manufacturing sector. Specifically, the MSE sector was envisaged as a priority sector for multifaceted government support, since 1997. This was also clearly indicated in GTPs and beyond. The policy review done by Dr. Ricardo R Pinto (Ricardo, 2019) confirms if the two main goals of the Industrial Development Strategic Plan of 2013-2025 require a focus on the enterprise sector, if they are to be achieved: Increase the share of industrial sector from 13% to 27% of GDP; and increase the share of manufacturing sector from 4% to 17% of GDP by 2025. The overall aim was not only to reduce poverty in urban areas through employment generation but also enterprises serve as a playground for the emergence of entrepreneurs and lay the foundation for industrial development. As cited by the scholars (Hailai Abera Weldeslassie, et.al, 2019), issuing the first national Enterprises Development and Promotion Strategy in 1997; formulation of the Women Policy in 1998; the establishment of the Federal MSEs Development Agency and issuing Ethiopia's Industrial Development Strategy in 2003 aim to promote enterprises development and empower women by facilitating conditions to have access to resources and to take part in economic activities (Rahel & Issac, 2010). Since

1997 attention of the public sector for private enterprises, the level of support, understanding, and definitions for manufacturing enterprises have been changed in a progressive manner in Ethiopia.

CHAPTER THREE

3. RESEARCH METHODOLOGY AND DESIGN

3.1. APPROACH AND MODEL

This study investigates how far the enterprises' market is integrated into the selected reference markets in Ethiopia, which are Addis Ababa, Bahir Dar, and Hawassa. This section justifies the model being used for this research work. To reach the objectives of this study, a quantitative approach for describing the major characteristics of enterprises in Ethiopia is used followed by the vector error correlation model (ECM) which is a well-established methodology in price transmission analysis.

Price transmission occurs when the change in one price causes another price to change. Economists have long been concerned with the measurement of price transmission in different markets. This section of the study highlights different types of measuring price transmission systems and identifies the best option for this particular study as each system has its merits and demerits.

Market integration is a complex, multidimensional concept, despite being seemingly straightforward at first glance. The study done by a graduate student at Wageningen University (Mengistu Kind, et, al., 2015) clarifies that it is commonly measured by the degree of price transmission between spatially distinct regions in response to shocks. When considering market integration, the study done by Mengistu Kinde, and their team (2015) suggests that it is important to distinguish market integration from competitive equilibrium. The distinction is important if one is to draw correct conclusions from empirical data on prices and trade volumes. The same study suggests that the cointegration approach which can alternatively be termed cointegration and vector error correction models (VECMs) is the most commonly used method and is an important analytical tool that can identify the degree of integration, adjustment speed, and asymmetry in price relationships. However, the study indicates that non-stationary transaction costs and sub-par data are problematic when applying cointegration. This tells that data quality is crucial for applying this model.

There are, in general, four major types of mechanisms (Mengistu, 2010), that can measure price transmission, mathematically. These can be the Ratio of percentage changes between two

time periods, Correlation analysis, Regression analysis, and Co-integration analysis (Minot, 2010).

Ratio of percentage changes between two time periods: By using the ratio of percentage changes between the two time periods, we simply want to examine how much the price changes, and then express this as a percentage between the two time periods which is not our interest as we are going to see the market integration among three distinct market areas.

Correlation analysis: In non-technical language, a correlation exists when two variables display a linear relationship beyond what is expected by chance alone (Stockwell, 2008). When examining data in statistical analysis, correlation reveals itself by the relationship between two variables. The most common measure of correlation is called the "Pearson Product-Moment Correlation Coefficient". It is important to note that while more than two variables can be analyzed when looking for correlation, the correlation measure only applies to two variables at a time (Stockwell, 2008). Correlation is defined by most statisticians as "A measure of the strength of relationship between random variables. The population correlation between two variables X and Y can be defined as:

$\rho(X,Y)=\text{Covariance}(X,Y)/\{\text{Variance}(X)*\text{Variance}(Y)\}^{½}\ldots$ 3.1

ρ is called simply the Correlation Coefficient. Itis a number that summarizes the direction and closeness of linear relations between two variables. The sample value is called r, and the population value is called ρ (rho). The correlation coefficient can take values between -1 through 0 to +1. The sign (+ or -) of the correlation defines the direction of the relationship. When the correlation is positive ($r > 0$), it means that as the value of one variable increases, so does the other. If a correlation is negative($r < 0$), it indicates that when one variable increases, the other variable decreases. This means there is an inverse relationship between the two variables. According to Stockwell (2008), it is important to note that a correlation measure of zero does not necessarily imply that there is no relationship between the two variables, just that there is nolinear relationship present in the data that is being analyzed. This reminds us that the sample data is drawn from the population. It is sometimes difficult to judge whether a correlation measure is "high" or "low". There are certain situations where a correlation measure of 0.3, for example,may be considered negligible. In other circumstances, such as in the social sciences, a 0.3 correlation measure may suggest that further examination is needed. This tells that the context of the data must be understood to evaluate any results before we carry out analysis (Stockwell, 2008).

To determine whether two events happen at the same time or by chance, we use the concept of statistical significance. Statistical significance is a mathematical tool used to determine whether the outcome of an experiment is the result of a relationship between specific factors or due to chance (Will Kenton, 2022). Typically, in many sciences, results that yield $P \leq 0.05$ are considered borderline statistically significant but remember that this level at the $P \leq 0.05$ level is commonly considered statistically significant, and $P \leq 0.005$ or $P \leq 0.05$ significance still involves a pretty high probability of error (5%). Results that are significant at 0.001 levels are often called "highly" significant. Remember that these classifications represent nothing else but arbitrary conventions that are only informally based on general research experience. Like any quantitative measurement, correlation has its advantages and disadvantages. The Advantage is easy to calculate and understand but it only considers the relationship between two variables at a time, and it does not take lags into account (Minot, 2010).

Regression analysis: a statistical tool for examination of relationships between variables. Usually, the investigator seeks to ascertain the causal effect of one variable upon another—the effect of a price increase upon demand, for example, or the effect of changes in the money supply upon the inflation rate. To explore such issues, the investigator assembles data on the underlying variables of interest and employs regression to estimate the quantitative effect of the causal variables upon the variables that they influence. The investigator also typically assesses the “statistical significance” of the estimated relationships that is, the degree of confidence that the true relationship is close to the estimated relationship (Sykes, 2000).

Two major types of regression analysis are well-known in statistics: simple linear regression and multiple linear regression analysis. In simple linear analysis, we only consider two main basic variables, one as dependent and the other as independent. One simple example is the relationship between education and earrings. At the outset of any regression study, one formulates some hypothesis about the relationship between the variables of interest, here, education and earnings. Common experience suggests that better-educated people tend to make more money. It further suggests that the causal relation likely runs from education to earnings rather than the other way around. Thus, the tentative hypothesis is that higher levels of education cause higher levels of earnings, other things being equal. A simple linear regression model can be given by the equation.

$$y = \beta_0 + \beta_1 x + \varepsilon \qquad 3.2$$

Where β_0 and β_1 are unknown parameters and ε is a random variable, usually considered normally distributed. The model equation (3.2) states that a value of *y* is equal to a linear function of *x* plus a random quantity *ε*. Parameters β_0 and β_1 are the intercept and slope of the regression line (University of Florida, 2022).

In applications, the model is fitted to data using the method of least squares, giving the "prediction" equation:

$$\hat{y} = \widehat{\beta}_0 + \widehat{\beta}_1 x + \varepsilon \qquad 3.3$$

$where\ \widehat{\beta_0}\ and\ \widehat{\beta_1}\ are\ estimates\ of\ \beta_0\ and\ \beta_1, and\ \widehat{\ }$ the "predicted value" of y is obtained by inserting a value of x into the prediction equation. In multiple regression analysis, the general purpose is to learn more about the relationship between several independent variables and a dependent or criterion variable (University of Florida, 2022). In the above example about education and earnings,earnings are affected by a variety of factors in addition to years of schooling; consider the introduction into the earnings analysis of a second independent variable called "experience". Holding constant the level of education, we would expect someone who has been working for a longer time to earn more.

A multiple linear regression model with k independent variables has the equation.

$$y = \beta_0 + \beta_1 x_1 + \ldots + \beta_k x_k + \varepsilon \qquad 3.4$$

where ε is a random variable with mean 0 and variance σ2. A prediction equation for this model fitted to data is

$$\hat{y} = b_0 + b_1 x_1 + \ldots + b_k b_k + \varepsilon \qquad 3.5$$

where $\hat{y}$ denotes the "predicted" value computed from the equation and b_i denotes an estimate of βi (University of Florida, 2022).

Concerning price transmission, most of the previous study uses a simple correlation coefficient (Minot, 2010). A high correlation coefficient is evidence of co-movement and is often interpreted as a sign of an efficient market. Another early approach was to use regression analysis on contemporaneous prices, with the regression coefficient being a measure of the co-movement of prices. For example, Mundlak and Larson (Mundlak, 1992) estimate the transmission of world food prices to domestic prices in 58 countries using annual price data from the FAO. They found very high rates of price transmission: the median elasticity of

transmission was 0.95, implying that 95% of any change in world markets was transmitted to domestic markets.

The static regression approach has been criticized for assuming an instantaneous response in each market to changes in other markets. There is generally a lag between the price change in one market and the impact on another market due to the time it takes traders to notice the change and respond to it. A change in world prices may take more than a month to be reflected in domestic prices. These dynamic effects can be captured by including lagged world prices as explanatory variables in regression analysis (Ravallion, 1986).

The advantages of using multiple linear regression analysis in pricetransmissions can be listed as that it gives information to calculate transmission elasticity; it can test relationships statistically; it can consider lagged effects, inflation, and seasonality; and it can analyze the relationship of more than two prices. Its disadvantages can be that it is awkward to do in Excel (easier with STATA or Statistical Package for the Social Sciences (SPSS)); and may mislead with results if data are non-stationary regression analysis (Minot, 2010).

Cointegration analysis: the theory is an innovation in theoretical econometrics that has created the most interest among economists in recent decades. Definition in the simple case of 2-time series X_t and Y_t, that are both integrated of order one (I (1)) and means that the process contains a unit root). This, by definition, means that a vector of I (1) variable y_t is said cointegrated if there exists a vector β_i such that $\hat{\beta}_i y_t$ is trend stationary. If there exist r such linearly independent vectors β_i, i= 1,...,r, then y_t is said cointegrated with cointegrating rank r. The matrix $\beta = (\beta 1, \ldots \beta r)$ is called a cointegration matrix (Sørensen, 2005).

The main concept of cointegration (Granger C. W., 1981) and the estimation of cointegration give us a framework for estimating and testing long-run equilibrium relationships between non-stationary variables (Granger C. J., 1989). A time series is said to be stationary if there is no systematic change in the mean if there is no systematic change in variance, and if strictly periodic variation has been removed (Chatfield, 2004). On the other hand, a non-stationary series has a statistical property that is time dependent. Non-stationary series may contain stochastic or deterministic trends. Consider two prices, p_{1t} and p_{2t} contain stochastic trends and are integrated of the same order, say I(*d*), and the two prices are in the spatially separated market, then the prices are said to be cointegrated if.

$P_{1t} - \beta P_{2t} = \mu_t$ 3.6

Where β is referred to as the cointegrating vector, whilst equation (3.6) is said to be the cointegrating regression. This equation can be estimated by utilizing *inter alia* Ordinary Least Squares (OLS) (Engle R. a., 1987) or a Full Information Maximum Likelihood method developed by Johansen (Johansen S., 1991). The main concept of Cointegration is that, in the long run, these prices are closely moving together, even if there may be a drift apart in the short run, and this is consistent with the idea of market integration.

Engle and Granger test the null of no cointegration by applying unit root tests on $\hat{u}_t$. Johansen derived the distribution of two test statistics for the null of no cointegration referred to as the Trace and the Eigenvalue tests (Johansen S., 1988). As μ_t is stationary, these prices have a trend in the long-run proportionality; β measures the long-run relationships between the two prices. According to Balcombe and Morrison (Balcombe, 2002), this measurement is sometimes referred to as the elasticity of price transmission; this is when the prices are converted to logarithms. On the other hand, this cointegrating parameter does not identify this elasticity, or in other words, the completeness of transmission.

Besides testing market integration, the general idea of Cointegration has an important implication, alleged by the Granger Representation Theorem (Engle R. a., 1987). According to this theorem, if two trending, say I (1), variables are cointegrated, their relationship may be validly by an Error Correction Model (ECM), and vice versa. In the case that prices from two spatially separated markets, p_{1t} and p_{2t}, are cointegrated, the Vector Error Correction (VECM) representation is as follows:

$$\begin{bmatrix}\Delta p_{1t}\\ \Delta p_{2t}\end{bmatrix} = \begin{bmatrix}\mu_1\\ \mu_2\end{bmatrix} + \begin{bmatrix}\alpha_1\\ \alpha_2\end{bmatrix}(p_{1t-1} - \beta p_{2t-1})_+ \quad A_2\begin{bmatrix}\Delta p_{1t-1}\\ \Delta p_{2t-1}\end{bmatrix} + \ldots + A_k\begin{bmatrix}\Delta p_{1t-k}\\ \Delta p_{2t-k}\end{bmatrix} + \begin{bmatrix}V_{1t}\\ V_{2t}\end{bmatrix} \quad 3.7$$

In equation 3.7, p_{1t} and p_{2t} along the respected changes, ΔP_{1t} and Δp_{2t}, are the central variables for the explanation of the error correlation model. The matrix that contains A_2 to A_k measures the short-run effect of the model, and β is the cointegrating parameter that characterizes the long-run equilibrium relationship between the two prices. The levels of the variables enter the ECM combined as the single entity ($p_{1t-1} – \beta p_{2t-1}$) which reflects the errors or any divergence from this equilibrium and correspond to the lagged error term of equation (3.7), the vector α_1 and α_2 contains the parameters that explain the error correction coefficient and usually between

$0 < |\alpha| < 1$, i= 1,2, and it measures the extent of corrections of the errors that the market initiates by adjusting p_{1t} and p_{2t} towards restoring the long-run equilibrium relationship.

We can see the speed of α_i (it is near to one or not) to judge whether the market returns to its equilibrium, according to this statement short-run adjustments are directed by, and consistent with, the long-run equilibrium relationship. This gives a chance to the observer to determine the speed of adjustment that shapes the relationship between the two prices (FAO, The State of Agricultural Commodity Markets 2022. The geography of food and agricultural trade: Policy approaches for sustainable development, 2022).

Another important point about cointegration is the concept of causality. Granger (Engle R. a., 1987) explains that if there is a Cointegration between two-time series, causality will exist at least in one direction. The idea of causality testing has been used by economic historians interested in the industrial revolution, for instance, Hatton and Lyons (Hatton John, 1983) consider export-led growth, and Tsoulouhas (Tsoulouhas, 1992) the link between population and technology. However, without cointegration causality tests may yield spurious results. Engle and Granger (Engle R. a., 1987), prove that "If two series are individually I (1), and cointegrated, a causal relationship will exist in at least one direction. Furthermore, the Granger representation theorem demonstrates how to model cointegrated I (1) series in the form of a vector autoregressive (VAR) model. In particular, the VAR can be constructed either in terms of the levels of the data, the I (1) variables; or in terms of their first difference, the I (0) variables, with the addition of an error correction term (ECM) to capture the short-run dynamics. If the data are I (1) but not cointegrated, causality tests cannot validly be derived unless the data are transformed to induce stationary which will typically involve tests of hypotheses relating to the growth of variables" (Greasley, 1998)

The above definition has a significant dispute in the literature (Pagan, 1989) as it shows precedence, rather than instantaneous causality that the majority of economists profess. However, if there is an integration between the two markets, the price in one market, p_1, would commonly be found to Granger-cause the price in the other market, p_2, and/or vice versa. Thus, Granger Causality gives us additional evidence of whether or in which direction price transmission is occurring between two series. In this connection, we need to seriously note the following points. "Granger causality may exist, indicating that, although the two-price series

drift apart due to other factors such as non-stationary transaction costs, some price signals are passing through from one market to another. On the other hand, lack of Granger causality may not imply an absence of transmission, as price signals may be transmitted instantaneously under special circumstances" (Taru, 2017). The Error Correction Model (ECM) is an additional source for testing for non-linear adjustment to the long-run equilibrium and asymmetric price transmission. Lee and Granger (Granger C. J., 1989) suggested an Asymmetric Error Correction Model (AECM) where the endogenous variable speed of adjustment depends on whether the deviation from long-run equilibrium is positive or negative. Single asymmetric ECM is specified as follows:

$$\Delta p_{1t}=\mu_1 + \alpha^{+}_1 + (p_{1t-1} - \beta p_{2t-1})^{+} + \alpha_1^{-}(p_{1t-1} - \beta p_{2t-1})^{-} + \sum_{i=1}^{k} \delta_i \Delta p_{2t-i} + \sum_{i=1}^{k} \delta_i \Delta p_{1t-i} + V_{1t} \quad 3.8$$

From the above equation, the divergence equilibrium equation has two parts, $(p_{1t-1} - \beta p_{2t-1})^{+}$ and $(p_{1t-1} - \beta p_{2t-1})^{-}$ expressing positive and negative disequilibrium, respectively. According to FAO working paper **"**asymmetry occurs in the event when positive and negative divergences from the long run equilibrium between p_{1t} and p_{2t} result in changes in p_{1t} that have different magnitude. Therefore, asymmetric transmission implies that $\boldsymbol{\alpha^{+}_1}$ is not equal to $\boldsymbol{\alpha^{-}_1}$. The null of symmetry against the alternative hypothesis that adjustment is symmetric is tested by imposing the equality restriction, $\boldsymbol{\alpha_1^{+} = \alpha_1^{-}}$**"** (FAO, Commodity Market Review 2003-2004, 2003).

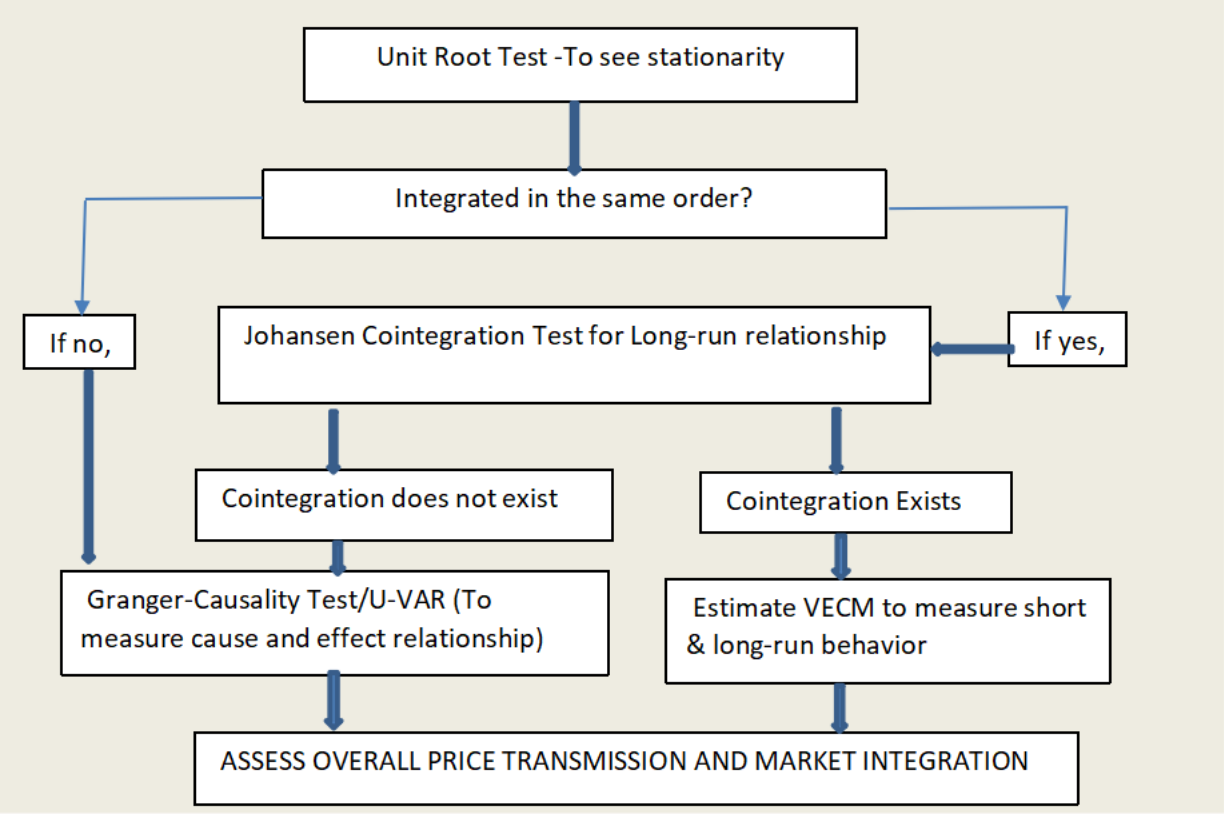
Considering the above empirical tools that can be used to assess the nature of market integration and price transmission, the next discussion is to show how to apply the basic time series techniques (FAO, Commodity Market Review 2003-2004, 2003), (See figure 1). The sequence of the test is:

1. Start by testing the Augmented Dickey-Fuller (Dickey, 1979) or the Phillips and Perron tests (Perron, 1988). Dickey and Fuller developed a procedure for testing whether a variable has a unit root or equivalent and that the variable follows a random walk.
2. After testing the Augmented Dickey-Fuller, we can see whether the series is integrated with the same order (say I (1)), or not. If the series are integrated at the order I (1), we can test the null of non-cointegration against one co-integrating vector using the Johansen procedure (Johansen S., 1991).
3. If prices are co-integrated then we focus on error correction representation, in the form of a vector error correction model (VECM) and observe the speed of adjustment, the short-run dynamics, and the direction of granger causality in the short or the long run following Granger (1969, 1988) causality test.

4. Specify the asymmetric error correction model (AECM) based on results on the direction of causality and test for the null of symmetry following Granger and Lee (1989).
5. Discuss on results of price transmission and market integration.

Note that, this study uses the method of co-integration analysis because it considers lags; it does not give misleading results if the data are non-stationary, moreover; and it helps to build an error-correction model (ECM), the dynamic co-movement among variables and the adjustment process towards long-term equilibrium (Maysami, Koh Tiong Sim & Ramin Cooper, 1995). This is the particular interest of the study. Thus, the summary of this section is depicted in the diagram, below as a guiding tool as it is more specific and closer to the applications compared to the diagram of **Figure 3.1**. More specifically, the next section addresses the methodological aspects mathematically for the precision of the model.

Figure 3.1 VECTOR ERROR CORRECTION MODEL ESTIMATION FLOW


Unit Root Test -To see stationarity
Integrated in the same order?
If no,
Johansen Cointegration Test for Long-run relationship
If yes,
Cointegration does not exist
Cointegration Exists
Granger-Causality Test/U-VAR (To measure cause and effect relationship)
Estimate VECM to measure short & long-run behavior
ASSESS OVERALL PRICE TRANSMISSION AND MARKET INTEGRATION

(Source: SUMMARIZED FROM THE THEORETICAL DISCUSSIONS)

The standard spatial price determination models which predict that changes in supply and demand conditions in one market affect trade and therefore prices in other markets as equilibrium is restored through spatial arbitrage are employed using monthly data over the period 2010 to 2015. As suggested by most of the studies that are addressed in the other

sections, this study utilizes time series econometric analysis techniques that test for the co-movement of prices. The development of these techniques, which include cointegration and error correction models, is the tool for analyzing spatial market relationships.

3.2. DATA SOURCE AND ARRANGEMENT

This study intended to see market integration in Ethiopia for the period 2010 up to 2015. This general situation about the market integration which considers time, product, and geographic location/place may encompass several social, economic, and policy aspects. However, due to time and other resource limitations, the researcher decided to pick some markets as a center of comparing market integration. Similar points are considered for product selection but with some logical calculations. As the title of the research indicates, this study is interested in seeing the cases of footwear manufacturing enterprises rather than whole market actors. Of more than 1.2 million enterprises operating in Ethiopia, almost all of them are engaged in the production of certain items for domestic consumption. Some of these products are leather products which is represented by footwear for this study. Therefore, the study investigated footwear market integration between Addis Ababa, Bahir-Dar, and Hawassa towns, in Ethiopia. Data was sourced secondarily, and opinions were collected by CSA for model specification. Thus, the data source is CSA for the period from 2010-2015.

To make more closer to the facts on the ground, this study analyzed whether prices converge by calculating the average price differences between markets in each period. Convergent markets are integrated markets where prices are at the same level. A zero average suggests absolute convergence, indicating that the markets may be well integrated. A non-zero mean points relative convergence, indicating that prices move in tandem, but that there are price differences because of transaction costs. The actual existence of positive trade flows is the only sufficient condition for market integration. For this purpose, we have derived the price data from the quantity of goods produced in a year and the values of goods sold in the year. We derived the price figure by dividing the values of goods(footwear) sold in the specific year by that of the total quantity of goods/footwear sold in the year. Analysis through only prices does not provide all the answers on market integration. Thus, we substantiated this by carrying out historic response analysis and impulse response function analysis, consecutively.

3.3. DATA ANALYSIS METHOD

Data analysis is performed using simple statistical descriptive analysis, impulse response function, and econometrical analysis using the statistical packages SPSS Version 23 and EViews-12. Overall, the analysis is conducted within the framework of the standard spatial price determination models, as discussed above. The time series data used from CSA via the SPSS package was exported to MS Excel as a database and exported to EViews-12. The CSA data includes quantitative data from which the price is calculated for 72 months of the six years and responses of enterprises about the major challenges and some of the opportunities they have been facing in their respective geographical market areas. The data and opinions have been used for triangulation purposes. Moreover, the analysis models indicated above are used to compare the integration of one product at a time between two places for the target product, footwear prices.

3.4. MODEL SPECIFICATION

In the literature review section, the law of one price is discussed, which states that when one price is converted to a common currency, the same good should sell for the same price in different markets. The spatial Equilibrium Model is defined as the model solving the simultaneous equilibrium of plural markets under the assumption of the existence of transportation costs between two regions (Samuelson, 1952). The same models were discussed by Takayama et, al (Takayama, H. Hashimoto, N.D. Uri, 1984). In the case of footwear manufacturing enterprises in Ethiopia, we have three different market prices which we can further assume as:

P_{At}= Footwear prices at Addis Ababa (A) in a given period (t)

P_{Ht}=Footwear prices at Hawassa in a given period (t)

P_{Bt}= Footwear prices at Bahir Dar (B) in a given period (t)

T_A= transport cost at Addis Ababa(A) as a dominant central market

T_H= transport cost at Hawassa (H) with dominancy of the central market (A)

T_B= transport cost at Bahir Dar with dominancy of the central market (A)

T_{BH}= transport cost between Bahir-Dar(B) and Hawassa (H) which can be T_H+T_B

Based on the reality of the data from CSA which accounts for 2010-2015 and the nature of the objectives this research is interested in, the following two points are worth mentioning and recalled throughout this research work including its interpretations and implications. The first point is that the price of the footwear for the three distinct spatial is driven by the sum of annual

revenues of footwear manufacturing enterprises in Bahir-Dar (B), Hawassa (H), and Addis Ababa (A), separately. This means the price at each city for the specific period (monthly) is calculated by dividing the values of monthly goods sold by the quantity of goods sold per month. This is represented by the simple equation driven from the sum of annual revenues:

$$P_t = \frac{\sum Y_t}{\sum Q_t} \quad 3.9$$

Where p_t is the price of the product in the period (t)

$\sum Y_t$ is the sum of annual sales/revenues of the enterprises in the period (t)

$\sum Q_t$ is the sum of annual products the enterprises sold in the period (t); as a result, we need further arithmetic calculations to get the product price without transport cost. Thus,

$$(P - T)_t = \sum Y_t - \sum T_t \quad 3.10$$

Where $(P - T)_t$ is the price excluding the transport cost in period (t); and $\sum T_t$ is the sum of annual transport costs for the footwear manufacturing enterprises.

The second point is that transaction and transport costs can, dominantly, be linked between Addis Ababa (A) and Bahir Dar (B) and/or Hawassa (H) while there are possibilities to link Hawassa and Bahir Dar through the market forces. This implies that the transportation cost can be calculated for every market center/city distinctively rather than assuming the link only between the specific market centers (A, B, and H) identified for this study. However, Addis Ababa (A) is the dominant market center for all corners as it is the central point from every corner. However, there is a clear cost pattern among the three centers where the transport cost at Bahir Dar is greater than that of Hawassa, and Hawassa is greater than that of Addis Ababa. If we consider the market linkage between Bahir Dar and Hawassa, the logical cost magnitude can be the cost between Hawassa and Bahir Dar is greater than that of Bahir Dar-Addis Ababa, Bahir Dar-Addis Ababa is greater than Hwassa-Addis Ababa and Hawassa-Addis Ababa is greater than the transport cost at Addis Ababa.

According to the models discussed by Enke (Enke, 1951) and Takayama, et.al (1984), "given prices for a commodity in two spatially separated markets p_{1t} and p_{2t} the Law of One Price and the Enke-Samuelson-Takayama-Judge model postulates that at all points of time, allowing for transfer costs c, for transporting the commodity from market 1 to market 2, the relationship between the prices is $p_{1t} = p_{2t} + c$." (Nkendah, 2006).

In our case, the footwear price in Hawassa is equal to the manufacturer price plus transportation costs (see also Rapsomanikas et al. (2004), Fortenbery and Zapta (2004), Krivonos (2004)). This tells that:

$P_{Ht} = P_{At}+T_{At} = \frac{\sum Y_{Ht}}{\sum Q_{Ht}}$ 3.11

Similarly, the equilibrium in footwear prices between the Hawassa market and the Bahir Dar market is

$P_{Bt} = P_{Ht}+T_{Ht} = \frac{\sum Y_{Bt}}{\sum Q_{Bt}}$ 3.12

The equilibrium in footwear prices between Bahir Dar and Addis Ababa price is

$P_{Bt} = P_{At}+ T_{At} = \frac{\sum Y_{Bt}}{\sum Q_{Bt}}$ 3.13

Assume that RpA, RpH, and RpB are constant ratios that footwear price in two markets is attained in equilibrium in Addis Ababa – Hawassa, Hawassa –Bahir Dar, and Addis Ababa – Bahir Dar market, respectively.

(i.e. P_{At}/P_{Ht}=RpA, P_{Ht}/P_{Bt} = RpH, P_{At}/P_{Bt} = RpB) then

$P_{Ht} = P_{At} *$ RpA 3.14

$P_{Bt} = P_{Ht} * RpH$ 3.15

$P_{Bt} = P_{At} *$ RpB 3.16

In the equations, Q (3.14) to Q (3.16), RpA, RpH, and RpB are hypothesized to be greater than one. This is because the price in the three markets should be related as $P_{Bt} > PH_t > P_{At}$. Hence, we can measure the transportation costs in the following ways from Q (3.11) to Q (3.13).

$T_{AHt} = P_{Ht}-P_{At}$ 3.17

$T_{hb} = P_{Bt} - P_{Ht}$ 3.18

$Tab = P_{Bt}-P_{At}$ 3.19

In the short run, the equilibrium relationships in equations (3.11) to (3.13) need not exist due to the incomplete transfer of information. However, they will be equilibrium relationships in the long run. The transfer cost in the equilibrium is the fixed ratio of the two locational prices. From our equations (3.17), (3.18), and (3.19), dividing these equations by PAt, PHt, and again PBt then we get.

$T_{ah}/P_{Ht} = (P_{Ht}-P_{At})/P_{Ht}=1-P_{At}/P_{Ht}=1-RpA$ 3.20

$T_{hb}/P_{Bt} = (P_{Bt}-P_{Ht})/P_{Bt}=1-P_{Ht}/P_{Bt}=1-RpH$ 3.21

$T_{ab}/P_{Bt}=(P_{Bt}-P_{At})/P_{Bt}=1-P_{At}/P_{Bt}= 1-RpB$ 3.22

In the literature part of this work, the equilibrium price of footwear has time series patterns

about cointegration analysis (Fortenbery, T. R. and H. O. Zapata, 1993). We can write equation (3.14) to (3.16) as

$P_{Ht}=P_{At}$ + RpA 3.23

$P_{Bt}=P_{Ht}$ + RpH 3.24

$P_{Bt}= P_{At}$ + RpB 3.25

Assume further that in equations (3.23) to (3.25), if Hawassa price is cointegrated with Addis Ababa price, Bahir Dar price is also cointegrated with Hawassa price and Addis Ababa price with same variable β, then.

$P_{Ht}- \beta_1 P_{At}= \omega_{1t}$ 3.26

$P_{Bt}- \beta_2 P_{Ht}= \omega_{2t}$ 3.27

$P_{Bt}-\beta_3 P_{At}= \omega_{3t}$ 3.28

Here ω_{1t}, ω_{2t}, and ω_{3t} represent a stationary process with a constant mean that the two prices are cointegrated.

According to Engle and Granger (1987), certain economic series are such that they should not drift too far apart from each other. This means that the variables may depart from each other in the short run, but certain mechanisms force them back to a common path after some periods. Examples of such series are, the price of a certain commodity sold at two different locations, wages, expenditure, etc., this means that we can hypothesize a long-run relationship between the two footwear markets in Ethiopia. Besides this, there exist linear combinations of the random variables that are stationary in our equation (3.14) to (3.16) (Johansen S, 1988). We can express equations (3.23) to (3.25) in the long run to fit together by using the vector error correction model (VAR-ECM), starting by defining the basic framework and then considering an n–dimensional vector autoregressive error correction model. The model has the following general form (Minot, 2010)

$$\Delta p_t = \alpha + \pi p_{t-1} + \sum_{k=1}^{q} \Gamma_k \Delta p_{t-k} + \varepsilon_t \quad 3.29$$

Where p_t is a nx1 vector of n price variables,

Δ is the difference operator, so $p_t = p_t - p_{t-1}$,

ε_t is a nx1 vector of error terms, and

α is a nx1 vector of estimated parameters that describe the trend component

Π is a nxn matrix of estimated parameters that describe the long-term relationship and the

error correction adjustment, and

Γ_k is a set of nxn matrices of estimated parameters that describe the short-run relationship between prices, one for each of the q lags included in the model.

The vector error correction model tests for the effects of one variable on each other variables. Our study measures the effect of Addis Ababa as a central market price on the Bahir Dar price and Hawassa price. For our particular purpose, the above equation is simplified as:

a/ the relation between Addis Ababa and Hawassa price

$$P_{At} = \alpha + Q\left(P_{At-1} - \beta P_{Ht-1}\right) + \partial \Delta P_{Ht-1} + Þ \Delta P_{At-1} + \epsilon_t \quad 3.30$$

b/ the relation between Addis Ababa and Bahir Dar price

$$P_{At} = \alpha + Q\left(P_{At-1} - \beta P_{Bt-1}\right) + \partial \Delta P_{Bt-1} + Þ \Delta P_{At-1} + \epsilon_t \quad 3.31$$

c/The relation between Hawassa and Bahir Dar price

$$P_{Ht} = \alpha + Q\left(P_{Ht-1} - \beta P_{Bt-1}\right) + \partial \Delta P_{Bt-1} + Þ \Delta P_{Ht-1} + \epsilon_t \quad 3.32$$

Were,

P_{At} is Addis Ababa's price of footwear at time t

P_{Ht} is Hawassa's price of footwear at time t

P_{Bt} is Bahir Dar's price of footwear at time t

Δ is the difference operator, so $\Delta p_t = p_t - p_{t-1}$

α, Q, β, and Þ are estimated parameters, and

ε_t is the error term.

As described in the previous section (figure 3.1) if the original price series are I (0), then the first differences (Δp) will be stationary, or I (1). The coefficients in the error-correction model can be interpreted as follows:

β is the long-run elasticity of price transmission, if for e.g. β=0.3 in equation (3.31), this means 30% of Bahir Dar's price will be transmitted to the Addis Ababa price in the long run.

Q is the speed of adjustment. The term in parentheses represents the deviation or “error” between the prices in the previous period and the long-run relationship between the two prices.

The coefficient of change (∂) is the short-run elasticity of one price relative to the other price. If for example equation (3.31) represents the percentage adjustment of Addis Ababa price one period after a 1% shock in Bahir Dar price.

Þ represents effect of each change in the price on the change in the same price in the next period.

3.5. ETHICAL CONSIDERATIONS

The consideration of ethics in research, and general business is of growing importance. This is especially important for research like this which involves interaction with businesses and/or members of the business community. There is a range of interactions in our research that might occur, including in-depth review of others' ideas and observing people's and businesses' behavior and responses. Though all researchers are well-intentioned, there is the possibility that interaction with participants may inadvertently harm them in some unintended way.

It is the researcher's responsibility to consider whether any type of harm could occur when planning research and to ensure that mechanisms are instituted to remove it. It is, therefore, essential that carefully evaluating the potential for harm to arise and ensure that (a) behave according to appropriate ethical standards; (b) consider how our research might negatively affect participants; and (c) protect ourselves, our supervisors/teachers, and our institution from being placed in situations in which individuals could make claims of inappropriate behavior, resulting in public criticism or even our being sued.

Therefore, it will consider the psychological, financial, and social norms and the potential harm that might be caused if one or more of such standards are breached. That means, firstly, it must get ethical clearance from the Gelila International Seminary, department of Christian Leadership and Management. Then, the CSA and the enterprises, if need be would be communicated well and contacted for permission to carry out the research work in that environment. The objective, purpose, and approach of the research was communicated to the participating bodies including informing them about the possibility of withdrawing from the involvement when they feel discomfort in the process and involvement.

CHAPTER-FOUR

4. ANALYSIS

This chapter mainly focuses on two main sub-topics. The first subtopic of this chapter examines historical market integrity and its volatility in Ethiopia based on the opinions collected and summarized by the Central Statistics Agency of Ethiopia and other literature. This gives a broad understanding to the reader how the market integration in the sector looks like. Besides this, the sub-topic also includes a graphical analysis of price convergence. The last part details the explanation of the model by using econometric tools for estimating equation (3.26) to equation (3.32) that was formulated in the previous chapters.

4.1. HISTORIC MARKET INTEGRATION ANALYSIS

Unless we happen to be Amazon or Walmart, and thereby basically dictate and own the supplier channel right through from production to end sale, integration with other markets, suppliers, resellers, and other trading partners is critical to your success. Market integration solutions provide total trading partner enablement. From reducing time and costs associated with manual processing to eliminating human errors, improving data quality, increasing productivity, gaining supply chain visibility, and enhancing collaboration with our entire trading partner community, market integration solutions give us the edge we require to remain competitive in the digital age. Modern market integration tools and techniques have brought organizations a long way from the earliest days of exchanging information. Thanks to these solutions, exchanging data can now take place in the blink of an eye, allowing our company to operate more efficiently, competitively, and cost-effectively. However, there may be success factors and challenges in the processes of market integrations.

According to the Asian Development Bank (Bank, 2015) conclusion, success factors for market access include, but are not limited to, an enabling market environment, low entry barriers, adequate provision of market information, solid distribution channels, and reliable logistics systems. According to ADB (2015) for enterprises to survive in an increasingly competitive environment requires a new growth paradigm and market strategy, which focuses on knowledge and skill acquisition, technology upgrading, innovation, and wealth creation. These are likely to be necessary attributes for SME participation in regional and global production networks and for the high-value-adding parts of such networks.

According to the survey done by CSA (2011), out of 3493 MSEs' feedback collected, about 41% proved that their primary problem is linked with access to the market and integration in the product and input markets while 13% raised lack/shortage of raw material which has significant implication to market integration as their primary problem they face in the sector.
If we see the overall profiles of enterprises in Ethiopia, it tells where the challenges emanate from. The study done by O. Okpara and Dawit Mengistie (Mengistie, 2008) shows that 68% capital of SMEs comes from the savings of the promoters. The study shows that only 30% of the promoters were holding a Diploma or higher qualification. 92% of the SMEs are sole proprietorship market and less than 10% can speak English language. Only 23% of promoters had better marketing skills, an essential skill for the success of an enterprise. 55% of promoters felt access to finance and marketing was a bottleneck and problem for their success; 77% of the enterprises are managed by self or family.

According to the project document for Networking small enterprises in Ethiopia's leather sector (Beani, 2016), footwear and leather goods manufacturing enterprises have been operating for decades in Ethiopia and provide very significant employment opportunities but are operating without horizontal and vertical linkages and cannot enjoy the benefits of economies of scale. A profile assessment done by ECCSA (Associations, 2015) tells that there were 22 medium and large-scale footwear manufacturers which have a capacity of 12 million pairs/year. More than 90 micro and small footwear manufacturers contribute to 90% of the local market. Almost 95% of the factories were in and around the capital city and owned by the private sector.

According to the study done by Haile Abera (Haili Abera, 2019), the major obstacles to enterprises in Ethiopia are the question of sustainability, lack of credit, weak market linkage, insufficient training, weak human resources development schemes, dependency on government and spoon-feeding mentality, oscillations in government policies, price variations, weak links, and poor market and product development strategies. The same analysis reveals that more than 72% of enterprises in the country proved that they did not have institutional linkages in the form of contact with different institutions including public, Universities/Research centers, Colleges/TVETs, technology transfer institutions, NGOs, and other companies/suppliers/customaries within their respective regions. Regarding sectoral

linkages (manufacturing, construction, trade, urban agriculture, and services), about 77% of the respondents proved that they didn't have any sectoral linkage.

4.2. INTERPRETATION OF THE MODELS

For analyzing and interpreting the model, the basic econometric tools that simplify to estimate the error correction model are used. The sequences of the tests are an extension of Figure (3.1).

4.2.1. AUGMENTED DICKEY-FULLER (ADF) UNIT ROOT TEST

The analysis begins by examining the stationary properties of the variables using the Augmented Dickey-Fuller (ADF) Test (Dickey, 1979). The following equation is estimated for each of the time series:

$$\Delta x_t = \propto_0 + \alpha_{1t} + \beta_0 x_{t-1} + \sum_{i=1}^{k} \beta_i \Delta x_{t-1} + \varepsilon_t \quad (4.1)$$

Where Δ is the first difference operator; t is the time trend; k denotes the number of lags used and Ɛ is the error term; αs and βs are parameters. The purpose of the unit root test is to determine whether the series is consistent with the I (1) (integrated of order one) process with a stochastic trend, (Charles R. Nelson and Charles I. Plosser, 1982) or if it is consistent with an I(0) process. That is stationary, with deterministic trends, and still others to be integrated of order two (e.g., price indices in some markets) (Juselius, 1993).

TABLE-1: Unit Root Test for Variable PA @I(0)

Null Hypothesis: PA has a unit root				
Exogenous: Constant				
Lag Length: 2 (Automatic - based on AIC, maxlag=6)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-2.748342	0.0712
Test critical values:	1% level		-3.528515	
	5% level		-2.904198	
	10% level		-2.589562	
*MacKinnon (1996) one-sided p-values.				

In testing stationarity, we use the absolute value of t-statistics compared to the critical values (1%, 5%, and 10%), If the absolute value of the ADF t-statistics for the specific variable is higher than the critical value, then we reject the null hypothesis (It says, the variable has a unit root). If the absolute value of the ADF t-stat is less than the critical value, then we cannot reject the null hypothesis. As a result, Table 1 shows the absolute value of ADF t-stat is less than critical values at both 1% and 5%; even though it is higher than the 10% critical value, the p-value is greater than 5% (CV at 5% is advisable). This can be corrected by taking the 1st - difference which is depicted in Table-2, below.

TABLE-2: Unit Root Test for Variable PA @I(1)

Null Hypothesis: D(PA) has a unit root				
Exogenous: Constant				
Lag Length: 4 (Automatic - based on AIC, maxlag=6)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-5.498431	0.0000
Test critical values:	1% level		-3.533204	
	5% level		-2.906210	
	10% level		-2.590628	
*MacKinnon (1996) one-sided p-values.				

As we can see from Table-2, above the absolute value of ADF t-stat for PA is greater than the critical value even at 10% with a prob value even less than 1%/high significance/, then we reject the null hypothesis that the series has a unit root/non-stationary is rejected, which means the series (PA) is stationary at 1st-difference. If we carry the same procedure for PB and PH, the result is as:

TABLE-3: Unit Root Test for Variable PB @I(0)

Null Hypothesis: PB has a unit root				
Exogenous: Constant				
Lag Length: 0 (Automatic - based on AIC, maxlag=6)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-6.637478	0.0000
Test critical values:	1% level		-3.525618	
	5% level		-2.902953	
	10% level		-2.588902	
*MacKinnon (1996) one-sided p-values.				

As the t-statistics for the ADF absolute value of variable PB is greater than all critical values (1%, 5%, and 10%) and the p-value is also significant at even 1%, we can reject the null hypothesis that the series is stationary at a level. However, to be consistent with other series, we need to run the test at the 1st-difference, which is as follows, and the result proves that the PB is stationary at the 1st-difference with p-value significant at even 1%, see Table-4.

TABLE-4: Unit Root Test for Variable PB @I(1)

Null Hypothesis: D(PB) has a unit root				
Exogenous: Constant				
Lag Length: 4 (Automatic - based on AIC, maxlag=6)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-6.139760	0.0000
Test critical values:	1% level		-3.533204	
	5% level		-2.906210	
	10% level		-2.590628	
*MacKinnon (1996) one-sided p-values.				

TABLE-5: Unit Root Test for Variable PH @I(0)

Null Hypothesis: PH has a unit root				
Exogenous: Constant				
Lag Length: 6 (Automatic - based on AIC, maxlag=6)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-1.765476	0.3942
Test critical values:	1% level		-3.534868	
	5% level		-2.906923	
	10% level		-2.591006	
*MacKinnon (1996) one-sided p-values.				

As we can see from Tabl-5, above, the ADF absolute value of t-stat for PH is less than that of the critical values at the three levels and the p-value indicates that it is insignificant, we cannot reject the null hypothesis hence the series is non-stationary. Thus, need to go for the next level difference (1st-difference) which is depicted in Table-6, below.

TABLE-6: Unit Root Test for Variable PH @I(1)

Null Hypothesis: D(PH) has a unit root				
Exogenous: Constant				
Lag Length: 6 (Automatic - based on AIC, maxlag=6)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-5.523213	0.0000
Test critical values:	1% level		-3.536587	
	5% level		-2.907660	
	10% level		-2.591396	
*MacKinnon (1996) one-sided p-values.				

As we see from Table-6, above, the absolute value of the ADF t-stat for PH is greater than that of the three critical values with the significance at even 1%.

Therefore, we can conclude that the time series (PA, PB, and PH), as depicted in Table 7 below, are stationary at the first difference so that we can go for the optimal lag length and run the co-integration through the Johansen co-integration test method.

Table 7: ADF Stationarity Test Summary

Variable	Test on	t-statistics	@5% CV	Prob	Decision	Order of Integration
PA	Level	-2.748342	-2.904198	0.0712	Can't reject	**I (1)**
	1st-difference	-5.498431	-2.906210	0.0000	Rejection	
PB	Level	-6.637478	-2.902953	0.0000	Rejection	**I (1)**
	1st-difference	-6.139760	-2.906210	0.0000	Rejection	
PH	Level	-1.765476	-2.906923	0.3942	Can't reject	**I (1)**
	1st-difference	-5.523213	-2.907660	0.0000	Rejection	

Table 7: Summary ADF Test of Unit Root (Period: 2010M01 to 2015M12)

Table 7, above reports the results of the Augmented Dickey-Fuller (ADF) unit root test for PA,

PB, and PH. The fact that the level of the null hypothesis of the unit root cannot be rejected when the series is in level but can be rejected when the series is in first difference indicates that the series are integrated of order one. In PA and PH cases the time series are found to be stationary and integrated by order I (1) but PB is stationary and integrated by order I(0). This means that each variable is a random walk and integrated of the same order (I (1)) for PA and PH while I(0) for PB. This is a necessary but not sufficient condition for co-integration (see (Granger C. J., 1989)). The next step is to carry out optimal lag length and co-integration analyses of the variables, consequently.

4.2.2. DETERMINING OPTIMAL LAG LENGTH:

As we can see from Table 8 below, based on the information about the variables detected by the system, the optimal lag length is determined at six by the AIC method since this is the least possible value observed from the model. By using this optimal lag length, we can run the co-integration test using the Johansen co-integration test, the result for optimal lag length is depicted in Table-8, below.

TABLE 8: OPTIMAL LAG LENGTH

VAR Lag Order Selection Criteria						
Endogenous variables: PA PB PH						
Exogenous variables: C						
Date: 04/28/22 Time: 13:21						
Sample: 2002M01 2007M12						
Included observations: 66						
Lag	LogL	LR	FPE	AIC	SC	HQ
0	-1306.179	NA	3.40e+13	39.67209	39.77162 *	39.71142 *
1	-1300.647	10.39354	3.78e+13	39.77718	40.17530	39.93450
2	-1293.005	13.66225	3.95e+13	39.81834	40.51505	40.09365
3	-1287.965	8.553892	4.47e+13	39.93832	40.93362	40.33161
4	-1268.067	31.95735	3.24e+13	39.60808	40.90197	40.11936
5	-1258.811	14.02385	3.26e+13	39.60033	41.19281	40.22959
6	-1238.991	28.22836*	2.40e+13 *	39.27246 *	41.16352	40.01971
* indicates lag order selected by the criterion; LR: sequential modified LR test statistic (each test at 5% level); FPE: Final prediction error; AIC: Akaike information criterion; SC: Schwarz information criterion; HQ: Hannan-Quinn information criterion						

4.2.3. TESTING THE NUMBER OF CO-INTEGRATION

Co-integration test is only valid if the empirical data that we have is a non-stationary series. The main purpose of the Co-integration analysis is to test whether several non-stationary time

series data are co-integrated or not, this test will help us to determine whether a long-run relationship exists between the variables. Knowing the degree of Co-integration gives a basis for VEC specification (Martin Lettau, Sydney C. Ludvigson, 2010). The Johansen test is used to test co-integrating relationships between several non-stationary time series data. Compared to the Engle-Granger test, the Johansen test allows for more than one co-integrating relationship. Using the test to find the co-integration of time series avoids the issues created when errors are carried forward to the next step. Johansen's test comes in two main forms, i.e., Trace tests and Maximum Eigenvalue tests.

1. Trace tests

Trace tests evaluate the number of linear combinations in a time series data, i.e., K to be equal to the value K0, and the hypothesis for the value K to be greater than K0. It is illustrated as follows: H_0: $K = K_0$; H_0: $K > K_0$

When using the trace test to test for co-integration in a sample, we set K0 to zero to test whether the null hypothesis will be rejected. If it is rejected, we can deduce that there exists a co-integration relationship in the sample. Therefore, the null hypothesis should be rejected to confirm the existence of a co-integration relationship in the sample.

2. Maximum Eigenvalue test

An Eigenvalue is defined as a non-zero vector which, when a linear transformation is applied to it, changes by a scalar factor. The Maximum Eigenvalue test is similar to Johansen's trace test. The key difference between the two is the null hypothesis.

H_0: $K = K_0$

H_0: $K = K_0 + 1$

In a scenario where $K=K_0$ and the null hypothesis is rejected, it means that there is only one possible outcome of the variable to produce a stationary process. However, in a scenario where $K_0 = m-1$ and the null hypothesis is rejected, it means that there are M possible linear combinations. Such a scenario is impossible unless the variables in the time series are stationary.

Mathematically, we formulated the equations (3.26, 3.27, and 3.28) by assuming that the Hawassa price is co-integrated with the Addis Ababa price, Bahir Dar price is also co-integrated with the Hawassa price and Addis Ababa price with some variable β. The equations from 3.26-3.28 can be estimated at this juncture. As per Johansen's proposals, two different likelihood ratio tests can be estimated by using the software: the trace test (Table 9. A) and the

maximum eigenvalue test (Table 9. B), below.

Table 9: Johansen's Co-integration test (Series: PA, PB & PH)

A. Unrestricted Co-integration Rank Test (Trace)

Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.433777	52.23561	29.79707	0.0000
At most 1	0.178382	15.26574	15.49471	0.0541
At most 2	0.037651	2.494579	3.841465	0.1142
Trace test indicates 1 co-integrating eqn(s) at the 0.05 level; * denotes rejection of the hypothesis at the 0.05 level; **MacKinnon-Haug-Michelis (1999) p-values				

B. Unrestricted Co-integration Rank Test (Maximum Eigenvalue)

Hypothesized		Max-Eigen	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.433777	36.96986	21.13162	0.0002
At most 1	0.178382	12.77117	14.26460	0.0849
At most 2	0.037651	2.494579	3.841465	0.1142
Max-eigenvalue test indicates 1 co-integrating eqn(s) at the 0.05 level; * denotes rejection of the hypothesis at the 0.05 level; **MacKinnon-Haug-Michelis (1999) p-values				

By running the Johansen Co-integration test after even changing the orders of the series we got the same result as Table-9, above which indicates that there is 1 co-integrating eqn(s) at the 0.05 level for both the Trace and Max-eigenvalue tests. As the results of the two tests (Trace and Max-eigenvalue), it can be concluded that there is a long-term relationship between Addis Ababa, Hawassa, and Bahir Dar footwear prices; hence, the three prices are linked in the long run. With this, we can go for specifying the VECM with a lag length less than the number of the variables considered in the model specification (the appropriate lag length is 2 in our case).

4.2.4. JOHANSEN NORMALIZATION INTERPRETATION

PA is positioned as a dependent variable, as it appears in the first list of the test running among other variables. This means PA is the target variable with which the normalization is taken place, for this specific situation. It tells us that when we can take the normalization to be run by another variable, we have to put that variable in the first place in the list of tests running.

Let's take Table 10 for the normalization interpretation, below. We need to note that the signs of the coefficients in the normalization equation are interpreted in reverse in the long run. This means, in the long run, on average, the price at Bahir Dar has a negative effect over the price

at Addis Ababa while a positive effect of the price at Hawassa, *ceteris paribus*. In conclusion, we can put that the null hypothesis that there is no co-integration is rejected against the alternative of co-integrating relationships in the model. Thus, before we go for running the final model (VECM), we need to see the correction term as displayed in Table 10, below.

4.2.5. RUNNING ERROR CORRECTION TERM (ECT)

TABLE-10: RUNNING ECT

Standard errors in ( ) & t-statistics in [ ]			
Cointegrating Eq:	CointEq1		
PA (-1)	1.000000		
PB (-1)	0.059138		
	(0.10627)		
	[0.55646]		
PH (-1)	-0.678884		
	(0.16346)		
	[-4.15331]		
C	-58.23157		
Error Correction:	D(PA)	D(PB)	D(PH)
CointEq1	-0.674204	0.182163	0.546259
	(0.14412)	(0.27654)	(0.18595)
	[-4.67810]	[0.65872]	[2.93771]
D (PA (-1))	-0.241513	0.048240	-0.128944
	(0.11108)	(0.21315)	(0.14332)
	[-2.17415]	[0.22632]	[-0.89967]
D (PB (-1))	-0.009862	-0.511560	0.038184
	(0.05771)	(0.11074)	(0.07446)
	[-0.17088]	[-4.61946]	[0.51280]
D(PH(-1))	-0.389125	-0.022769	-0.387477
	(0.08805)	(0.16894)	(0.11360)
	[-4.41961]	[-0.13477]	[-3.41093]
C	0.308030	3.810819	5.967632
	(16.0886)	(30.8714)	(20.7580)
	[0.01915]	[0.12344]	[0.28749]

The first action we need to develop from the formal VECM is setting the Error Correction Term (ECT) which is termed as Error Correction Adjustment in equation (3.29) and given as:

$$ECT_{t-1}= \{PA_{t-1} - \gamma_j PB_{t-1} - \tau_m PH_{t-1}\} \ldots\ldots\ldots\ldots\ldots\ldots (4.2)$$

The co-integrating equation and long-run model which signifies the long-term relation between the variables and can be used to simulate the model specification results from the first section of Table-10, above and the result is:

$$ECT_{t-1}= [PA_{t-1} - 0.059PB_{t-1} - 0.68PH_{t-1} - 58.23] \ldots\ldots (4.3)$$

From the second part of Table-10, we can specify the model by considering PA as the target variable in the second section of Table-10 which is the short-term adjustment coefficients, equivalent to equation 3.29:

$$\Delta PA_t = -0.67ECT_{t-1} - 0.242PA_{t-1} - 0.0098PB_{t-1} - 0.389PH_{t-1} + 0.308 \quad \text{.....(4.4)}$$

The adjustment term coefficient which is calculated by ECT_{t-1} in the above equation, can imply that the previous period's price deviation from the long-run equilibrium level is corrected in the current period as an adjustment speed of 67 percent. When we consider the period considered in this research work (72 months) in equation 4.4, and if the long-run adjustment rate continues at nearly 67% ($0.67ETC_{t-1}$), it will take not more than two months of price transmission between the footwear price at Addis Ababa and other the two markets (Hawasaa and Bahir Dar).

When we take the price at Bahir Dar a percentage price change is associated with a 0.01 percent decrease in the price of Addis Ababa on average, ceteris paribus, in the short run. Similarly, a percentage change in the price of Hawassa is associated with a 39 percent decrease in the price of Addis Ababa at average ceteris paribus in the short run.

The effect of the two prices (at Bahir Dar and Hawassa) shows that the price at Addis Ababa was above the long-run equilibrium for that it has been reduced towards the long-run equilibrium. That is how the price at Addis Ababa is impacted by the price at Hawassa and Bahir Dar, in the long run (nearly in two months period).

If we compare the effect of the two prices (Hawassa and Bahir Dar), the price at Hawassa is slightly stronger than that of Bahir Dar, as we can see from the sizes of the coefficients (compare 0.39 with 0.009 in equation 4.4). Moreover, the previous price at Addis Ababa, itself pushes its current/short-run/ price towards the long-run equilibrium by 0.24 points which is slightly weaker than that of Hawassa but stronger than that of Bahir Dar.

This sub-section analysis tells the general co-integration among the prices which need to be fixed on their cause-effect relationship through the Granger-Causality test. At this juncture, it is not possible to explain the effect of one market on the other or vice versa. However, in general, we can see from equation 4.4 that there is co-integration between the markets for the footwear enterprises in Addis Ababa, Hawassa, and Bahir Dar; but weak as a unit change in a

market cause less than 40% effect on the other; where the effect of Hawassa is about 39% and Bahir Dar is about 0.9%, even. Let's concentrate on relations justified by the Granger-Causality Test, in the next sections.

4.2.6. THE GRANGER CAUSALITY TEST AND MODEL ESTIMATION

Granger causality implies there exists a relation between the current value of one variable and the past values of others (Granger C. J., 1989). If past X contains useful information, in addition to the information in past Y, to predict future Y, we say X "Granger causes" Y. It does not mean changes in one variable cause changes in another. By using the n-test jointly, test for the significance of the lags on the explanatory variables, in effect the 'Granger causality' test between these variables. Causality may exist from variable X to Y, but not Y to X; from Y to X, but not X to Y and from both Y to X and X to Y. Although the interpretation of the relationship is difficult, the 'Granger causality' test can also be used as a test for whether a variable is exogenous, i.e., if the variable in the model affects a particular variable; it can be viewed as exogenous. In this process, the probability values and F-statistics are crucial indicators where we reject the null hypothesis if the p-value is greater than the F-statistics, i.e., there is a Granger Causality of such specific variable over the other. We have run Table-12, below, to understand the Granger Causality aspects of our variables (PA, PB, and PH).

Table 12: THE GRANGER CAUSALITY TEST OF PA, PB AND PH

Null Hypothesis	**F-Statistic**	**Prob**	**Decision**
PB does not Granger Cause PA	0.88473	0.5127	Rejection
PA does not Granger Cause PB	0.19841	0.9758	Not Rejected
PH does not Granger Cause PA	10.1642	2.E-07	Rejection
PA does not Granger Cause PH	2.93672	0.0151	Rejection
PH does not Granger Cause PB	0.64324	0.6952	Not Rejected
PB does not Granger Cause PH	1.25626	0.2934	Rejection

When we test the Granger causality of the Bahir Dar and Addis Ababa market, we can reject the hypothesis that the Bahir Dar price does not Granger cause the Addis Ababa price, but we cannot reject the hypothesis that Addis Ababa price does not Granger cause Bahir Dar price. Therefore, it appears that Granger causality runs one way here from Bahir Dar to Addis Ababa, and not on the reverse. This evidence suggests that to predict the price of the future Addis Ababa market, we need to depend on the price at Bahir Dar but not vice versa. This contradicts the logic explained in Chapter 3 of this research work. The basic assumption of the explanation in Chapter 3 was the dominance of the Addis Ababa market over the other two. This was

basically due to the assumption that Addis Ababa is a common market for all markets to buy and/or import inputs and sell out their products. Note the following, if two variables have a common trend, Granger causality must exist in at least one direction, unidirectional or bidirectional (Granger, 1981, 1988). Even if Co-integration indicates the absence or presence of Granger causality, it does not indicate the direction of causality between variables. This direction of the Granger (or temporal) causality can be detected through the VECM derived from the long-run co-integrating vectors (A. Mansur M. Masiha, Rumi Masih, 2002).

Furthermore, we can reject the hypothesis that the price at Hawassa does not Granger cause the price of Addis Ababa, and at the same time, we do reject the hypothesis that the price at Addis Ababa does not Granger cause the price at Hawassa. Therefore, it appears that Granger causality runs from Hawassa to Addis Ababa and from Addis Ababa to Hawassa, too. This indicates that it is possible to predict the Hawassa market by analyzing prices at the Addis Ababa market or, to predicate the Addis Ababa central market by depending on the Hawassa market for the product under consideration for this research work.

When we compare the Granger causality between the Bahir Dar and Hawassa markets, we cannot reject the null hypothesis that the Bahir Dar market does not Granger causes Hawassa market price of footwear, but for the reverse as our calculated p-value is greater than the F-statistics for the first (Hawassa leads Bahir Dar) but less than the F-statistics for the later (Bahir Dar leads Hawassa). Therefore, granger causality does not affect from Hawassa to Bahir Dar but from Bahir Dar to Hawassa. Note that the term "Granger causality" is something of a misnomer since a finding of Granger causality does not mean that movement in one variable physically causes movement in another (Chris, 2002). In the above analysis if, for example, movements in the Bahir Dar market (PB) were found to Granger cause movement in the Addis Ababa market (PA), this would not imply that the Addis Ababa market change as a direct result of, or because of movement in the Bahir Dar market (PB). Rather causality simply implies a chronological order of movement/ precedence in the series. Some diagnostic tests tell that the model has some problems with residual normality tests for every component as well as for joints. This tells further correction and looking for alternative ways, which most probably supports the situation by looking at the historic price convergence among the market areas which actually can be seen through impulse response functions (IRF).

Thus, as depicted in Table 12, let us see the bivariate relationship between the Granger Causal variables before looking into IRF. Table 12 guides us to see the relationship between the price of footwear at Bahir Dar explains the price at Addis Ababa; the Price of Hawassa, also, explains the price at Addis Ababa; the Price of Addis Ababa explains the price of Hawassa and the effect of change in the price of Bahir Dar explains price at Hawassa. The next portion is in sequential order of that relationship which advances equations 3.30-3.32 by including the long-run error correction term (ECT) and the effect of the previous times price at the same market by a unit.

TABLE-13: THE EFFECT OF PB ON PA (Equation 3.31)

Vector Error Correction Estimates		
Date: 05/13/22 Time: 00:23		
Sample (adjusted): 2002M04 2007M12		
Included observations: 69 after adjustments		
Standard errors in ( ) & t-statistics in [ ]		
Cointegrating Eq:	CointEq1	
PA(-1)	1.000000	
PB(-1)	2.403297	
	(0.62293)	
	[3.85808]	
C	-469.8802	
Error Correction:	D(PA)	D(PB)
CointEq1	-0.050416	-0.256675
	(0.04389)	(0.07461)
	[-1.14868]	[-3.44000]
D(PA(-1))	-0.890573	0.362075
	(0.11321)	(0.19246)
	[-7.86646]	[1.88128]
D(PA(-2))	-0.499029	0.231090
	(0.11857)	(0.20157)
	[-4.20885]	[1.14647]
D(PB(-1))	0.007072	-0.182910
	(0.09742)	(0.16562)
	[0.07259]	[-1.10442]
D(PB(-2))	-0.052757	0.007265
	(0.07538)	(0.12815)
	[-0.69985]	[0.05669]
C	-1.246835	2.872275
	(16.5828)	(28.1912)
	[-0.07519]	[0.10189]

Table 13, above, tells that:

$$\Delta PA_t = -0.05ECT_{t-1} - 0.9PA_{t-1} + 0.007PB_{t-1} - 1.25 \quad \text{……..(4.5);}$$

This function (equation 4.5) shows that the previous period's price deviation from the long-run equilibrium level is corrected in the current period as an adjustment speed of 5 percent per month which tells that it may take more than 20 months to reflect the price change in Bahir Dar and the previous period price in Addis Ababa. The error correction term tells us that the price at Addis Ababa is above the long-run equilibrium as it is pushed downward towards the equilibrium level (negative sign of the ECT coefficient). On the other hand, a percentage change in Bahir Dar price of the footwear causes an increment of 0.007% in Addis Ababa price at average, *ceteris paribus*, in the short run. This means, that if a hundred points change happens on the Bahir Dar price of the footwear, there may be less than 1% (0.7) change would be observed on the same product price at Addis Ababa, which is insignificant. The previous period's price of the product in the same market (Addis Ababa) can affect a 90% change in the current price of the same market. This tells, still, about 9% of footwear price changes in Addis Ababa is explained by other markets including footwear price at Hawassa.

TABLE-14: THE EFFECT OF PA ON PH

Vector Error Correction Estimates		
Date: 04/28/22 Time: 22:14		
Sample (adjusted): 2002M04 2007M12		
Included observations: 69 after adjustments		
Standard errors in ( ) & t-statistics in [ ]		
Cointegrating Eq:	CointEq1	
PH(-1)	1.000000	
PA(-1)	-1.070032	
	(0.29514)	
	[-3.62551]	
C	21.46755	
Error Correction:	D(PH)	D(PA)
CointEq1	-0.516325	0.432775
	(0.17852)	(0.13574)
	[-2.89233]	[3.18821]
D(PH(-1))	-0.387260	-0.418640
	(0.17084)	(0.12990)
	[-2.26686]	[-3.22273]
D(PH(-2))	-0.150526	-0.103361
	(0.13951)	(0.10608)
	[-1.07895]	[-0.97433]
D(PA(-1))	-0.308542	-0.594226
	(0.18043)	(0.13720)

	[-1.71003]	[-4.33114]
D(PA(-2))	-0.193162	-0.375007
	(0.14934)	(0.11356)
	[-1.29341]	[-3.30229]
C	6.801683	2.737480
	(20.2617)	(15.4069)
	[0.33569]	[0.17768]

In a similar token, the model is specified as:

$$\Delta PH_t = -0.52ECT_{t-1} - 0.39PH_{t-1} - 0.31PA_{t-1} + 6.8 \quad \text{…….. (4.6)}$$

The coefficient of the error correct term in equation-4.6, above, tells that the previous period's price deviation from the long-run equilibrium level is corrected in the current period as an adjustment speed of 52 percent in a month; thus, it may take not more than 2 months to be reflected fully due to the price variation in Addis Ababa and the previous period price at Hawassa, too. Similarly, a percentage change in Addis Ababa's price causes about a 31 percent reduction in the price of Hawassa at average ceteris paribus in the short run period. The previous price at Hawassa pushes its current price by about 39% which is stronger than that of a unit change in the prices of other market areas (Addis Ababa). If we assume a hundred-point change in the price at Addis Ababa for the footwear, a 31% current price reduction towards the long-run equilibrium can be expected while about 40% is from its previous price level as we can see from the coefficient previous period's price change at Hawassa. This means, more than 29% of the footwear price variation at Hawassa is explained by markets other than Addis Ababa and the previous price of Hawassa, itself.

TABLE-15: THE EFFECT OF PH ON PA (Equation 3.30)

Vector Error Correction Estimates
Date: 04/28/22 Time: 22:26
Sample (adjusted): 2002M04 2007M12
Included observations: 69 after adjustments
Standard errors in ( ) & t-statistics in [ ]

Cointegrating Eq:	CointEq1	
PA(-1)	1.000000	
PH(-1)	-0.934552	
	(0.23925)	
	[-3.90612]	
C	-20.06254	
Error Correction:	D(PA)	D(PH)
CointEq1	-0.463083	0.552484
	(0.14525)	(0.19102)
	[-3.18821]	[2.89233]
D(PA(-1))	-0.594226	-0.308542
	(0.13720)	(0.18043)
	[-4.33114]	[-1.71003]

D(PA(-2))	-0.375007	-0.193162
	(0.11356)	(0.14934)
	[-3.30229]	[-1.29341]
D(PH(-1))	-0.418640	-0.387260
	(0.12990)	(0.17084)
	[-3.22273]	[-2.26686]
D(PH(-2))	-0.103361	-0.150526
	(0.10608)	(0.13951)
	[-0.97433]	[-1.07895]
C	2.737480	6.801683
	(15.4069)	(20.2617)
	[0.17768]	[0.33569]

In a similar token, the model is specified as:

$$\Delta PA_t = -0.46ECT_{t-1} - 0.59PA_{t-1} - 0.42PH_{t-1} + 2.7 \quad \text{…….. } (4.7)$$

This equation (4.7) shows that the previous period's price deviation from the long-run equilibrium level is corrected in the current period with an adjustment speed of 46 percent. Similarly, a percentage change in footwear price in Hawassa causes about a 42% reduction of the price at Addis Ababa at the average ceteris paribus in the short-run period. The previous time price at Addis Ababa, itself, adjusts itself in the current time (short run) by about 59%, citrus Paribus.

TABLE-16: THE EFFECT OF PB ON PH (Equation 3.32)

Vector Error Correction Estimates
Date: 05/13/22 Time: 00:07
Sample (adjusted): 2002M04 2007M12
Included observations: 69 after adjustments
Standard errors in ( ) & t-statistics in [ ]

Cointegrating Eq:	CointEq1	
PH(-1)	1.000000	
PB(-1)	-146.0968	
	(39.5781)	
	[-3.69135]	
C	20914.01	
Error Correction:	D(PH)	D(PB)
CointEq1	-0.000726	0.004354
	(0.00090)	(0.00118)
	[-0.80269]	[3.67400]
D(PH(-1))	-0.762249	-0.125857
	(0.11846)	(0.15512)
	[-6.43439]	[-0.81135]
D(PH(-2))	-0.366681	-0.140507
	(0.12558)	(0.16443)
	[-2.92001]	[-0.85451]
D(PB(-1))	-0.016253	-0.197867
	(0.12253)	(0.16044)
	[-0.13265]	[-1.23330]

D(PB(-2))	-0.048310	-0.015567
	(0.09616)	(0.12591)
	[-0.50239]	[-0.12363]
C	10.59276	3.807022
	(21.3919)	(28.0109)
	[0.49518]	[0.13591]

The last comparison is the effect of price change at Hawassa on that of Bahir Dar for footwear. The specific model for such a relation is:

$$\Delta PH_t = -0.007ECT_{t-1} - 0.76PH_{t-1} - 0.02PB_{t-1} + 10.6 \quad \textbf{…(4.8).}$$

Equation 4.8 tells that the previous period's price deviation from the long-run equilibrium level is corrected in the current period with an adjustment speed of 0.7 percent, it may take more than 100 months to be fully transmitted into Hawassa due to the price change in Bahir Dar. A percentage change in the footwear price at Bahir Dar causes about a 2 percent reduction in the price of footwear at Hawassa at average *ceteris paribus,* in the short run. The previous price at Hawassa has about 76% change (reduction) in its current (short run) price, citrus paribus. This tells us that about 76% of price adjustment at Hawassa for footwear is led by its previous period price for the same product, and only 2% may be explained by the 100-point change in Bahir Dar for footwear price.

Equation 4.8, as that of equation 4.5 explains the effect of Bahir Dar on both Addis Ababa and Hawassa. The lead role of Bahir Dar towards Addis Ababa (4.5) and Hawassa (4.8) is piece mile. A similar effect can be observed with regards to the coefficients of long-run error correction terms of equation 4.4 to equation 4.8, above. In equation 4.4 where the effects of both Hawassa and Bahir Dar apart from Addis Ababa's previous period's price itself are considered, the long-run error correction term plays about 67% in response to hundred-point changes in other market prices for the same product (footwear). When it comes to equation 4.5 which explains the price at Addis Ababa through Bahir Dar, only a 5% cumulative error correction effect on Addis Ababa and only a 0.7% effect on Hawassa (equation 4.8). This finding tells that even though there is cointegration between Hawassa and Bahir Dar and Addis Ababa and Bahir Dar as a lead effect for the former markets, respectively, the effect the Bahir Dar market has on Addis Ababa and Hawassa is insignificant. The distance could be reflected in the transport and transaction costs can be mentioned as a cause which is explained in the historic integration analysis section, above. If we take the effect of Hawassa on Addis Ababa (equation 4.7) and vice versa, 46% of the price change is explained as a long-term error correction effect of Hawassa on Addis Ababa and 52% long-run equilibrium adjustment is

recorded as of the hundred-point change in Addis Ababa. This tells that even if the price situation in one market affects the second one by not less than 46%, the effect of Addis Ababa outweighs that of Hawassa on the reverse.

One key point to be mentioned at this point is that we do not consider the effect of Hawassa on Bahir Dar as it is rejected by the cause-effect analysis done by the Granger-Causality effect analysis. Before we finalize our analysis, we need to see the impulse response effects which may confirm some of the analyses addressed so far.

4.2.7. IMPULSE RESPONSE FUNCTION INTERPRETATION

According to Potter (1995), interpretation of the dynamic interrelationships among prices at alternative market levels is best pursued through a consideration of impulse response functions. In contrast to other linear models, the response of the shock is dependent upon the history of the series. Potter also added that the possible asymmetric nature of the response implies that the size and sign of the shock will influence the nature of the response. The impulse responses represent percentage changes in prices to a certain percentage shock in one of the prices.

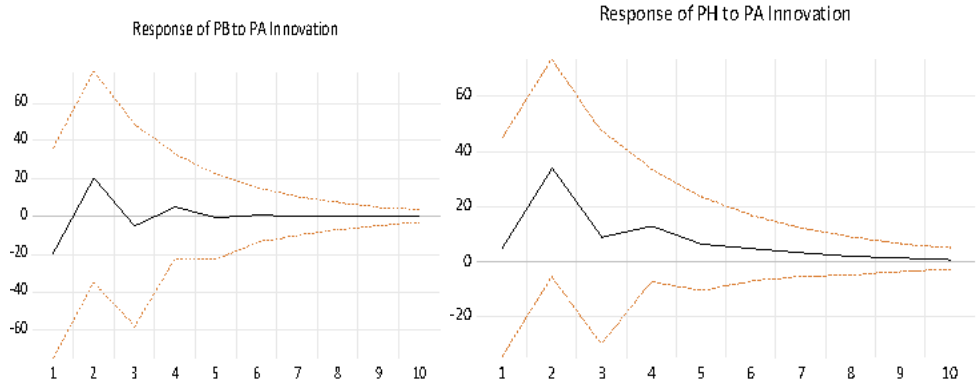
There are many types of impulse response functions (Daniel C. Hoper and Barry K. Goodwin, 1999) but for this particular study, we used Potter (Potter, 1995) that define responses (denoted

I_{t+k}), based on observed data, Zt, Zt-1, .., (in our case it is PH and PA) and the shock u which we didn't detect such cases in this study.

/t+k= (u, Zt, Zt-1…) = E (Zt+k /Zt+u, Zt-1= Zt-1…) - E (Zt+k /Zt= Zt, Zt-1= Zt-1.)….(4.9)

In the context of this study, the impulse response function answers questions related to the response of the Hawassa and Addis Ababa market to a one standard error unit shock in the Bahir Dar market; Hawassa and Bahir Dar market to a one standard error unit shock in Addis Ababa; and Bahir Dar and Addis Ababa market to a one standard error unit shock in Hawassa market by considering historical situation summarized in section 4.1, above. This is to test the response when Bahir Dar's price increase and decrease as volatility is low and high. We estimate the Hawassa and Addis Ababa price responses using the entire sample. The sign, magnitude, and persistence of responses of one market to shocks in another footwear product market are captured.

FIGURE-1: Response to Cholesky One S.D. (d.f. adjusted) Innovations
± 2 analytic asymptotic S.E.s



The response of Bahir Dar price of footwear to one unit variation of standard deviation in Addis Ababa price is stiff upward movement from negative to positive level in the first two periods which is estimated to be within the first fourteen months of the period (January 2010 2011) and then declined till the third period (from 15th up to the 21st month) which again moved up till the 4th period (up to 28th month) which again declined slowly to the neutral level at the fifth period (at 35th month). Starting from the fifth period, the response of Bahir Dar footwear price to that of Addis Ababa is neutral as the graph is flat across zero.

The same response is observed on the price of Hawassa to a unit standard deviation/ change of footwear price in Addis Ababa, but it has taken a longer time to be exactly at zero. As we can see from the second section of the above impulse graph (Figure-1), it steadily declined from the fourth period to that of the 10th period to reach a neutral/zero effect level. The implication is that a unit standard error change in Addis Ababa in the short-run causes a volatile change in the price at both Bahir Dar and Hawassa narrowing towards the long-run equilibrium status, and finally arriving at the long-run equilibrium level. This fits, exactly, with the one-price theory we have discussed in the previous sections.

FIGURE-2: Response to Cholesky One S.D. (d.f. adjusted) Innovations
± 2 analytic asymptotic S.E.s

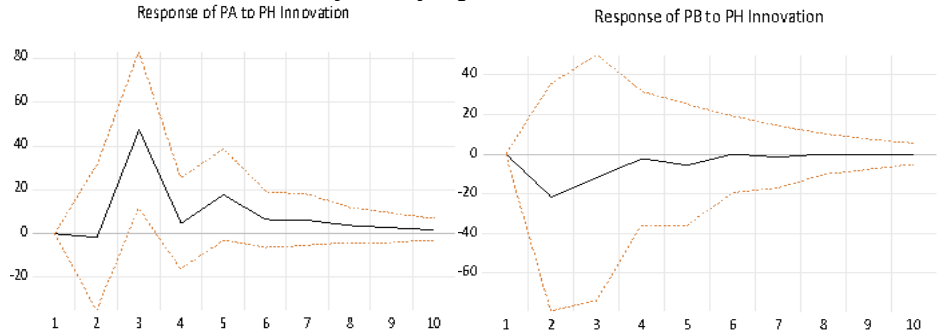


Figure-2, above, tells us about the response of footwear prices at Addis Ababa and Bahir Dar towards a unit standard deviation on the price at Hawassa for the same product in the period between the first month of 2010 and the end of 2015. In the first section (Right) of Figure 2, we see the reaction of Addis Ababa's price towards the price change in Hawassa. This particular graph shows that in the first two periods, the Addis Ababa price movement seems stable even though slightly below zero(negative) while sharply increasing positively up to period three; again, sharply declined towards a stable level up to the fourth period. Again, it started slowly (compared to the previous periods) and increased until period five, then started declining up to period six. Finally, starting beyond period seven (49th month), Addis Ababa's price became stable at zero in the long run. The response of Bahir Dar's price towards that of Hawassa is a bit different compared to Addis Ababa's price responses. It is negative starting from the first up to the sixth period, even though its movement is forward to the long-run stable status. Finally, beyond six and half period (beyond the 38th month) it became a stable movement.

FIGURE-3: Response to Cholesky One S.D. (d.f. adjusted) Innovations
± 2 analytic asymptotic S.E.s

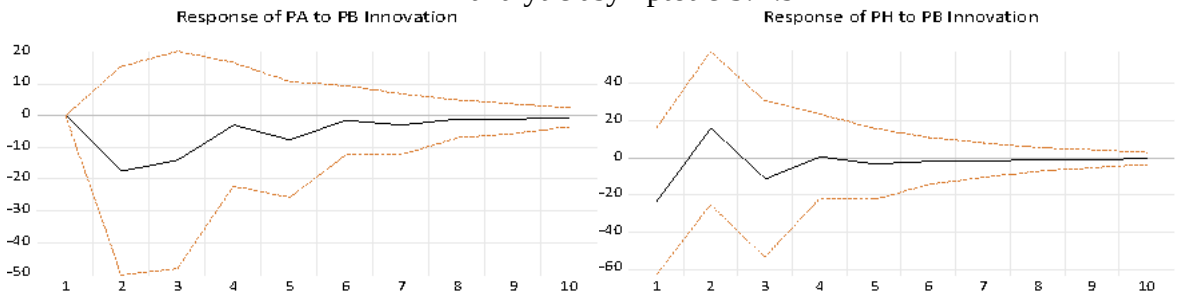


Figure-3, above, indicates the responses of footwear prices at Addis Ababa and Hawassa towards one standard deviation change at the footwear price of Bahir Dar. The first section(Right) tells that starting from the first half period to the half of the 8th period the price at Addis Ababa in response to that of Bahir Dar is below stable status (negative), and then it arrived at the stable level; and thus, the price relation between Addis Ababa and Bahir Dar was moving towards stable level but almost negative both in the long-run and short-run. However, it arrived at a stable level starting from the first half of the ninth period (about 59th month). This is the longest period and is consistent with the model analysis which indicates the piece-mile effect of price at Bahir Dar on both Addis Ababa and Hawassa.

The second part of Figure 3 (Left) tells the response of Hawassa's footwear price towards that of one standard deviation change in Bahir Dar's price for the same product. In between the first and second periods, it sharply increased from the negative level in period one to positive in

period two but sharply declined and crossed the stable level in period two and a half and became negative between the first half of period three until period four. Starting from period four it asymptotically moved forward along the stable status in its long-run. This also tells the existence of a minimal effect of the price at Bahir Dar on that of Hawassa.

FIGURE-4: Response to Cholesky One S.D. (d.f. adjusted) Innovations
± 2 analytic asymptotic S.E.s

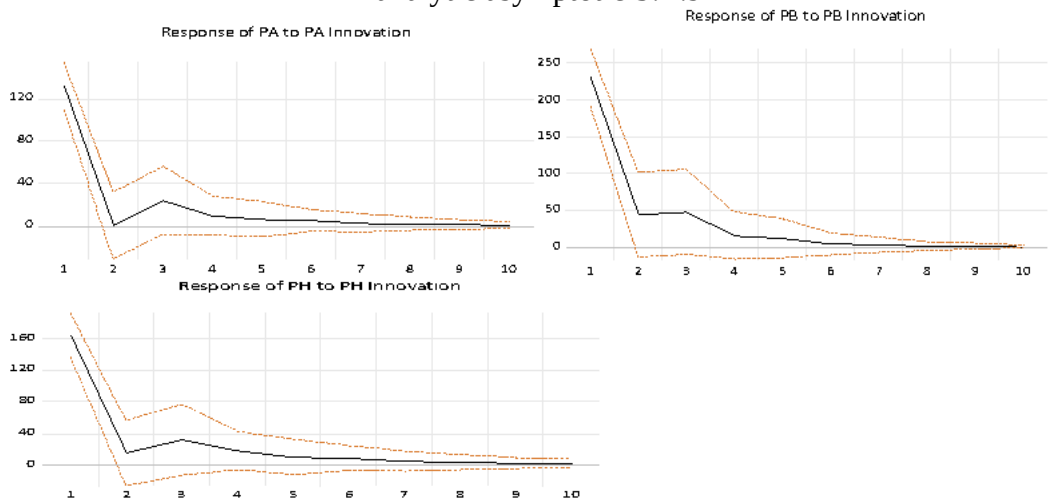


Figure-4 above has three sections, but they have the same feature which is also consistent with the price convergence theory in the short and long run. One standard deviation change in the price of a certain product (for us, it is the footwear) in the short run affects its future price level which guides itself towards the same status in the long run. This is observed whether we see the reaction of Addis Ababa's price on its future price level; that of Bahir Dar as well as the price at Hawassa itself caused them to be the same in the long run.

The literature review part of this paper reveals that adjustment costs and market power, particularly monopolistic price-setting possibilities in the specific product markets can be the main causes of asymmetric price transmission; other possible causes of asymmetric price transmission are the presence of government interventions of political parastatal natures, stock accumulation due to low demand for domestic products, and search costs associate with asymmetric information may also lead to asymmetric price transmission. It needs further research and investigation in the sector.

CHAPTER FIVE

5. CONCLUSION AND RECOMMENDATIONS

In summary, the nature of price transmission from one market to the other and then to the reverse markets was assessed by reviewing the practical experiences in Ethiopia, testing co-movement, the Granger causality effect, the speed of adjustment, and impulse response to the other market. The tests were conducted based on average monthly prices at Addis Ababa, Hawassa, and Bahir Dar prices for footwear manufacturing enterprises. Each price is calculated from the total monthly sales value at a market and values of footwear sold in the month, on average in that market. This is calculated from the data collected and stored by the Ethiopian Central Statistical Authority for the period from 2010 up to 2015.

5.1. CONCLUSIONS

From a historical perspective, based on the review of literature, market integration issues are stranded with various factors that need consistent and persistent efforts of sectors responsible for such roles. Market integration solutions provide total trading partner enable environment. From reducing time and costs associated with manual processing to eliminating human errors, improving data quality, increasing productivity, gaining supply chain visibility, and enhancing collaboration with the entire trading partner community, market integration solutions give the edge required to remain competitive in the digital age.

According to the survey done by CSA (2011), out of 3493 enterprises' feedback collected, about 41% proved that their primary problem is linked with access to the market and integration in the product and input markets while 13% raised lack/shortage of raw material which has significant implication to market integration.

If we see the overall profiles of enterprises in Ethiopia, it tells where the challenges emanate from. The study done by O. Okpara and Dawit Mengistie (Mengistie, 2008) shows that 68% capital of enterprises comes from the savings of the promoters. The study shows that only 30% of the promoters were holding a Diploma or higher qualification. 92% of the enterprises were sole proprietorship market and less than 10% could speak English language. Only 23% of promoters had better marketing skills, an essential skill for the success of an enterprise. 55% of promoters felt access to finance and marketing was a bottleneck and problem for their success; 77% of the enterprises are managed by self or family.

In summary, the historical review proves that the major obstacles to enterprises in Ethiopia are weak market linkage, the question of sustainability, lack of credit, insufficient training, weak human resources development schemes, dependency on government and spoon-feeding mentality, oscillations in government policies, price variations, and poor product development strategies. More than 72% of enterprises in the country proved that they don't have institutional linkages in the form of contact with different institutions even within their respective regions. Regarding sectoral linkages (manufacturing, construction, trade, urban agriculture, and services), about 77% of the enterprises proved that they didn't have any sectoral linkage.

The price co-movement analysis (equations 3.15-3.17) shows that the footwear price at Addis Ababa co-moves with the changes both in Hawassa and Bahir Dar in the long run. Similarly, the footwear price at Hawassa co-moves with changes in the prices of footwear at Addis Ababa and Bahir Dar, in the long run. On the contrary, the footwear price at Bahir Dar did not co-move with the footwear price at Hawassa and Addis Ababa. This is further confirmed by the results of the causality equations. The Granger Causality analysis proved that the price at Hawassa causes the Addis Ababa price and vice versa while the Bahir Dar prices cause the footwear price at Addis Ababa but not vice versa.

The logical justification of this study which anchored on price theories and literature was the dominance of Addis Ababa's price. Rather, this study revealed that footwear price in Addis Ababa is influenced by price at major regional towns including Hawassa and Bahir Dar. Further investigation is needed to isolate the reason why not Addis Ababa price influences the price at Bahir Dar; and why the influence of the price at Bahir Dar is insignificant on both Addis Ababa and Hawassa.

About the significance of adjustment concerning the price of footwear on one another, this study has revealed important points. If we compare the effect of Bahir Dar's and Hawassa's footwear prices on Addis Ababa (Equations 4.5 and 4.7), the influence of Bahir Dar's price is only 0.7% of the disequilibrium is corrected each month by a unit change in Bahir Dar while 42% of disequilibrium is corrected by a unit change in Hawassa footwear prices. If we take the influence of Addis Ababa and Bahir Dar's price on Hawassa (Equations 4.6 and 4.8), the influence of the former one is only 31% while the latter one is affected by only 2% for a unit change of Addis Ababa and Bahir Dar, respectively. We excluded the analysis for the effect of

Addis Ababa on Hawassa and the effect of Hawassa on Bahir Dar based on the results of the Granger-Causality tests.

The impulse response functions tell out important and most consistent with the theory of prices and most literature. As we can, only, see from the second section of the impulse graph (Figure-1), the price at Hawassa steadily declined in connection to a unit standard error deviation of Addis Ababa from the fourth period to that of the 10th period to reach neutral/zero effect level. The implication is that a unit standard error change in Addis Ababa in the short-run causes a volatile change in the price at both Bahir Dar and Hawassa narrowing towards the long-run equilibrium status; and finally arriving at the long-run equilibrium level, after seventy months for a nut standard error change on the counterpart prices. This fits, exactly, with the one-price theory we have discussed in the previous sections. Normally, as prices do not change by a unit, the time required for full transmission can be proportionally slower than the period we indicated in this analysis.

The first section of Figure 2 tells us about the response of footwear prices at Addis Ababa towards a unit standard deviation on the price at Hawassa for the same product in the period between the first month of 2010 and the end of 2015. This particular section of the graph tells that in the first two periods (14 months), the Addis Ababa price movement seems stable even though slightly below zero(negative) while sharply increasing positively up to period three; again, sharply declined towards a stable level up to the fourth period (28 months). Finally, starting beyond period seven (49th month), Addis Ababa's price became stable at zero in the long run.

Figure 3 indicates the responses of footwear prices at Addis Ababa and Hawassa towards one standard deviation change at the footwear price of Bahir Dar. The price relation between Addis Ababa and Bahir Dar was moving towards a stable level but almost negative both in the long run and short run. However, it arrived at a stable level starting from the first half of the ninth period (about 59th month). This is the longest period and is consistent with the model analysis which indicates the piece-mile effect of the price at Bahir Dar on both Addis Ababa and Hawassa.

Concerning the response of Hawassa's footwear price towards that of one standard deviation change in Bahir Dar's price for the same product, starting from period four it asymptotically moved forward along the stable status in its long run. This also tells the existence of a minimal effect of price at Bahir Dar on that of Hawassa.

Figure 4 has three sections, but they have the same feature which is also consistent with the price convergence theory in the short and long run. One standard deviation change in the price of a certain product (for us, it is the footwear) in the short run affects its future price level which guides itself towards the same status in the long run. This is observed whether we see the reaction of Addis Ababa's price on its future price level; that of Bahir Dar as well as the price at Hawassa itself caused them to be the same in the long run.

The literature review part of this paper reveals that adjustment costs and market power, particularly monopolistic price-setting possibilities in specific product markets can be the main causes of asymmetric price transmission. The can be other possible causes of asymmetric price transmission including the presence of political parastatal nature interventions, low demand for domestic products, and high search costs associated with asymmetric information may also lead to asymmetric price transmission. It needs further research and investigation in the sector.

5.2. RECOMMENDATIONS

Important points with policy implications can be driven from the findings of this research work even though there are areas that need further investigations and deep sighting. Concerning figures, market efficiency, cause-effect relations of the markets, and distributions of the enterprises across the country are few among others.

1. **Market efficiency:** If we compare the findings of this research in line with the summary points in Figure 1, there is relative market efficiency between Addis Ababa and Hawassa. The relationship between Addis Ababa and Bahir Dar as well as Hawassa and Bahir Dar are insignificant. Even though there is relative market efficiency between Addis Ababa and Hawassa, the price convergence level is less than 52% which takes a minimum of two months to be transferred between the two markets. The transfer from Addis Ababa and Hawassa to Bahir Dar is almost none. This can be addressed by actions that can reduce transaction and transport costs. Setting

mechanisms for a fair and continuous flow of information among markets is an important intervention.

2. **Causal Relationships:** Based on the price theories and empirical evidence, central markets like Addis Ababa in our case could have played a lead role in cause-effect analysis. The reverse is true. Almost all the markets are supposed to be through Addis Ababa either to buy their inputs or to sell their products. The markets outside Addis Ababa are supposed to assess the market situations for their next buying and selling activities. Even though the findings of this research tell that there is a lead role of Addis Ababa over Hawassa and Bahir Dar the later ones have the same roles over Addis Ababa. The weak lead role of Addis Ababa coupled with almost all enterprises being concentrated in Addis Ababa, there might be critical aspects which need to question why this has happened during the period considered in this study; and if there are some progresses in this regard. Still advancing transaction and transport costs through disseminating timely market information can relieve such bottlenecks.

3. **Fair and Favorable Situation:** If we take the period between 2010 and 2015, it was a relatively stable time compared to other periods in the specific market situations. The manufacturing sector including footwear enterprises has irreplaceable roles in the development of the country. Their role in creating job opportunities across the country, containing rural-urban labor migration, bringing foreign currencies, and comprehensive developmental contributions are echoed throughout national and regional debates. Policy efforts are needed for fair distribution of such sectors throughout the country. Favorable policy situations, apart from peace and stability, are crucial points for investors if believe to be all over the country.

REFERENCES:

Anderson CL, L. L. (2010). *Project methodology: using markets to promote the sustainable utilization of crop genetic resources.* In: Lipper L, Anderson CL, Dalton TJ (eds) Seed trade in rural markets.

Andorsen, M., Masiha, M., Rumi, M. (2002). Propagative causal price transmission among international stock markets: evidence from the pre- and post globlization period. *Global Finance Journal 13*, 63-91.

Arimah, B. (2001). *Nature and determinants of linkages between formal and informal sector in Nigeria.* Nigeria: African Development Review.

Associations, E. C. (2015). *Short Investment Profile of Leather Sector in Ethiopia.* Addis Ababa: ECCSA.

Baffes, J. a. (2001). Identifying price linkages. *A review of the literature and an application to the world market of cotton. Applied Economics.*, 33:1927-1941.

Balcombe, K. &. (2002). *Commodity price transmission: A critical review of techniques and an application to selected export commodities.* -: Food and Agriculture Organization of the United Nations.

Bank, A. D. (2015). *Integrating SMEs into global value chains: Challenges and policy actions in Asia.* Mandaluyong City, Philippines: Asian Development Bank Institute.

Barthélemy, H., et.al. (2018). Assessing the role of market integration in the consumption of traditional foods in Benin: a joint price instability coefficient and diet composition approach. *Agricultural and Food Economics(6)*, 4-18.

Baumann, P. (2013). Organizing corporate social responsibility in small and large firms: Size matters. *Journal of Business Ethics*, 693-705.

Beani, R. (2016). *Project on upgrading the Ethiopian leather and leather products industries; A progress report.* New York: UNIDO.

Bellon, M. (2010). *The effects of market integration on the nutritional contributions of traditional foods to the well-being of the rural poor in Africa. Project concept note.* Italy.: Bioversity International.

Berihu, A. A. (2014). *IDENTIFYING KEY SUCCESS FACTORS AND CONSTRAINTS IN ETHIOPIA'S MSE DEVELOPMENT: AN EXPLORATORY RESEARCH.* Addis Ababa: Ethiopian Development Research Institute.

Berihu, A. A. (2014). *IDENTIFYING KEY SUCCESS FACTORS AND CONSTRAINTS IN ETHIOPIA'S MSE DEVELOPMENT: AN EXPLORATORY RESEARCH.* Addis Ababa: Ethiopian Development Research Institute.

Birhanu, D. (2007). *Assessment of forest coffee value chains in Ethiopia: A case study in Kafa zone, Gimbo district.* German: Agricultural Science and Resource Management in the Tropics and Subtropics ARTS).

Blackman, J. (2000). *Entrepreneurs: interrelationships and their characteristics, values expectations, management practices and small enterprise performance.* . Gold Coast:: Griffith University.

Charles, R. N. and Charles, I. P. (1982). Trends and Random Walks in Macroeconomic Time Series: Some Evidence and Implications. *Journal of Monetary Economics, 10*, 139-162.

Chatfield, C. (2004). The Analysis of Time Series: An Introduction. *Chapman and Hall. CRC Press*, 46-59.

Chris, B. (2002). *Introductory econometrics for finance*. New York: Cambridge Unversity Press.

Daniel, C. H. and Barry, K. G. (1999). *Price transmission, threshold behaviour and asymmetric adjustment in the US pork sector.* Nashville: AAEA.

Dendena, G. E. (2009). *Fresh mango value chain analysis in Arbaminch area.* Addis Ababa, Ethiopia: Organization of value chain competency.

Deneke, S. (2001). *Private Sector Development in Ethiopia, Center for African Development Policy Researc.* Addis Ababa: Western Michigan University.

Diana, R. C. and Codreanu. (2009). Business Integration. *University of Oradea, Faculty of Economics, vol. 4(1)*, 1035-1038.

Diana, R. C. (May 2009). *Business Integration.*

Dickey, D. &. (1979). Distribution of the Estimators for autoregressive time series with a unit root. *Journal of the American Statistical Association,74*, 427-431.

Donald L. S., N. B. (1991). *Entrepreneurship: Creativity and Growth.* Michigan: the University of Michigan.

EDC. (2020). *SURVEY REPORT COVID19 IMPACTS ON MSMEs IN ETHIOPIA.* Addis Ababa: EDC.

Engle, R. a. (1987). Cointegration and Error Correction: Representation, Estimation and Testing. *Econometrica-55*, 251-276.

Engle, R. a. (1987). Co-integration and Error Correction: Representation, Estimation, and Testing, . *Econometrica, vol. 55(2):* , 251-276.

Enke, S. (1951). Equilibrium among Spatially Separated Markets. *Econometrica, vol. 19(1):*, 40-47.

FAO. (2003). *Commodity Market Review 2003-2004.* Rome: commodity and trade division.

FAO. (2022). *The State of Agricultural Commodity Markets 2022. The geography of food and agricultural trade: Policy approaches for sustainable developmen.* Rome: FAO.

Fekadu, G. (2015.). Determinants of Micro and Small Enterprises Growth in Ethiopia: The Case of Nekemte Town of Oromia Region, Ethiopia. *European Journal of Business and Management*, 2222-1905.

Fortenbery, T. R. and Zapta, H. O. . (1993). An Examination of Cointegration Between Futures and Local Grain Markets. *The Journal of Future Markets 13*, 921-932.

Gebreeyesus, M. (2013). Industrial Policy and Development in Ethiopia. In J. P. Carol Newman, *Manufacturing Development in Africa and Emerging Asia* (p. .003.0002). OXFORD: oxford.universitypressscholarship.com.

Gebreeyesus, M. (2016). Industrial Policy and Development in Ethiopia. In e. Carol Newman, *Manufacturing Transformation: Comparative Studies of Industrial*

Development in Africa and Emerging Asia (p. 36). Oxford: Oxford University Press,.

George R, et.al. (2004). *MARKET INTEGRATION AND PRICE TRANSMISSION IN SELECTED FOOD AND CASH CROP MARKETS OF DEVELOPING COUNTRIES: REVIEW AND APPLICATIONS.* Rome: FAO.

Goddard, W. (2019, April 24). Business Integration and What It Really Means. *ITChronicles*, pp. -.

Granger, C. J. (1989). Investigation of production, sales and inventory relationships using multicointegration and non-symmetric error correction models. *Journal of Applied Econometrics, vol. 4*, 135- 159.

Granger, C. W. (1981). Some Properties of Time Series Data and Their Use in Econometric Model Specification. *Journal of Econometrics, 16*, 121-130.

Greasley, L. O. (1998). Vector autoregression, cointegration and causality: testing for causes of the British industrial revolution. - (p. 1389). New Zealand: Department of Economics, University of Waikato, Private Bag, Hamilton.

Hailai, A. W., et. al. (2019). Contributions of Micro, Small and Medium Enterprises (MSMEs) to Income Generation, Employment and GDP: Case Study Ethiopia. *Journal of Sustainable Development; Vol. 12, No. 3*, 46-82.

Hailai, A. W., et.al. (2019). Contributions of Micro, Small and Medium Enterprises (MSMEs) to Income Generation, Employment and GDP: Case Study Ethiopia; Canadian Center of Science and Education,. *Journal of Sustainable Development; Vol. 12, No. 3*.

Haili A., e. a. (2019). Contributions of Micro, Small and Medium Enterprises (MSMEs) to Income Generation, Employment and GDP: Case Study Ethiopia. *Journal of Sustainable Development: Canadian Center of Science and Education*, Vol. 12, No. 3.

Hallberg, K. (1999). *Small and medium scale enterprises: Framework for intervention.* Zurik: World Bank: Small Enterprise Unit, Private Sector Development Department.

Harding, A. (2002). *Survival and success in African manufacturing firms.* Oxford: Centre for Study of African Economies, 82(7).

Hatton, J. L. (1983). Eighteenth-century British trade: Homespun or empire made? *Explorations in Economic History(20)(2)*, 163-182.

Hossain, M. a. (2010). Evaluation of Rice Markets in Bangladesh. *The Lahore Journal of Economics*, 77.

Hussain, M. N. (2000). Linkages between SMEs and Large Industries for Increased Markets and Trade: An African Perspective,. *ECONOMIC RESEARCH PAPERS NO 53*, 4.

(n.d.). *IDENTIFYING KEY SUCCESS FACTORS AND CONSTRAINTS IN ETHIOPIA'S MSE DEVELOPMENT: AN EXPLORATORY RESEARCH.*

ILO. (2009). Micro, Small and Medium-sized Enterprises and the Global Economic Crisis Impacts and Policy Responses. *Sustainable Enterprise Programme*, 41.

Imperial Government of Ethiopia. (1973). *First Five-Year Development Plan (1957-1961).* Addis Ababa: Berhanenselam publishing press.

Ishengoma, K. a. (2006). *Economic growth and poverty: do formalization of informal enterprises matter?* Hamburg:: German Institute of Global and Area Studies.

Johansen S. (1988). Statistical Analysis of Cointegrating Vectors. *Journal of Economic Dynamics and control 12*, 169-210.

Johansen, S. (1988). Statistical Analysis of Cointegrating Vectors. *Journal of Economic-12*, 169-210.

Johansen, S. (1991). Estimation and hypothesis testing of cointegration vectors in Gaussian. *Econometrica,59*, 551-580.

Juselius, K. (1993). VAR modelling and Haavelmo's probability approach to macroeconomic modelling. *Empirical Economics 18*, 595-622.

Kishana, A. (2004). Escaping poverty and becoming poor who gain, who loss,. *way world development. J. of Development.*, 32: 121-136.

Kishana, A. (2004). Escaping poverty and becoming poor who gain, who loss, and way world development. *J. of Development*, 32: 121-136.

Kishana, A. J. (2004). Escaping poverty and becoming poor in 20 Kenyan village. *J. of Development.*, 5: 211-226.

Kishana, A., et.al. (2004). Escaping poverty and becoming poor in 20 Kenyan village. *J ournal of Development-5*, 211-226.

Kolvereid, L. a. (2006). New business start-up and subsequent entry into self-employment. *Journal of Business Venturing,*, 21(6).

Liedholm, C. a. (1999). *Small enterprises and economic development: the dynamics of micro and small enterprises.* New York: Routledge Studies in Development Economics.

Mamo, G. (2009). *Choice of marketing channels and transaction costs: The case of maize marketing in Shashemene District. M.Sc thesis presented to the School of Graduate Studies.* Addis Ababa: Addis Ababa University.

Martin L., Sydney C. L. (2010). Measuring and Modeling Variation in the Risk-Return Trade-off. In E. B.V., *Handbook of Financial Econometrics: Tools and Techniques* (pp. 767-780). Princeton: Elsevier B.V.

Maysami, K. T. S. & Ramin, C. (1995). *A Cointegration Analysis of the Impact of Economic Forces and Global Market Integration on the Singapore Stock Market.* Singapore: Nanyang Business School, Nanyang Technological University.

Mengistie, O. O. (2008, February 25). Entrepreneurship with Special reference to the Status of the Small Business Entrepreneurship: A case study of Gondar, Ethiopia. *African Research Review*, p. 30.

Mengistu K., et,al. (2015). *Analyzing Market Integration: An Alternative Approach.* Wageningen: Wageningen University.

Mengistu, E. (2010). *Price transmission system in Ethiopian coffee market.* Uppsala: Swedish University of Agricultural Sciences.

Minot, N. (2010). Food price variability: Causes, consequences, and policy. *COMESA policy seminar* (p. 24). Maputo: African Agricultural Markets Project.

Muma, P. (2002). *Small business in the South Pacific: problems, constraints and solutions.* Suva: Zania Books.

Mundlak, Y. a. (1992). "On the Transmission of World Agricultural Prices". *World Bank Economic Review,6(3)*, 399-422,.

Nathalie, A. K. (2008). *Integration of Markets vs. Integration by Agreements: Policy Research Working Paper 4546.* The World Bank Development Research Group Trade Team.

Nkendah, R. (2006). *Economic analysis of the spatial integration of plantain markets in Cameron.* Yaounde: Université de Douala.

OECD. (2004). Promoting Entrepreneurship and Innovative SMEs in a Global Economy: Towards a More Responsible and Inclusive Globalization,. *Second OECD Conference of Ministers Responsible for Small and.* Paris, France: OECD.

Oya, P., et.al. (2011). *Small and Medium Enterprises: A Cross-Country Analysis with a New Data Set.* New York: Financial and Private Sector Development Consultative Group to Assist the Poor.

Pagan, A. (1989). *"20 Years after: econometrics, 1966-1986." In B. Cornet & H Tulkens, eds. Contributions to operations research and econometrics.* Cambridge, MA: The MIT Press.

Perron, P. C. (1988). Testing for a Unit Root in Time Series Regression. *Biometrika 75*, 335-346.

PMAC, P. M. (1975). *Declaration of Economic Policy of Socialist Ethiopia.* Addis Ababa: Provisional Military Administrative Council.

Potter, S. M. (1995). The Classical Approach to Convergence Analysis. *The Economic Journal 106 (437)*, 1019-1036.

Rapsomanakis et al. (2003). *Market Integration and Price Transmission in Selected Food and Cash Crop Markets of Developing Countries: Review and Application.* Food and Agriculture Organization.

Rashid, S. M. (2010). Are food Markets in Africa Efficient? Spatial Price Analyses and Beyond. Paper to be presented at the Comesa policy seminar Food price variability: Causes, consequences, and policy options" . 25-26.

Ravallion, M. (1986). Testing Market Integration. *American Journal of Agricultural Economics, 68*, 102-109.

Ricardo. (2019). *PART 1: ASSESSMENT OF ETHIOPIAN MSME POLICIES AND INSTITUTIONS: Invest for Jobs, Opportunities for Growth in Africa.* Addis Ababa.

Russel, I. (1997). Entrepreneurial strategies and problems in post-communist Europe: a survey of micro and small enterprises in Slovakia. *Journal of Small Business Management*, 35(3).

Samuelson, P. A. (1952). Spatial price equilibrium and linear programming,. *American Economic Review, Vol. 42*, 560-580.

Shibeshi, K. (2008). *Distributional issues in cereal value chains, the case of wheat market in Arsi. .M.Sc thesis presented to the School of Graduate Studies.* Addis Ababa: AAU.

SIVAKUMARAN, S. (2011). *MARKET ANALYSIS IN EMERGENCIES: A REPORT FOR THE CASH LEARNING PARTNERSHIP – CALP.* Oxford OX4 2JY: THE CASH LEARNING PARTNERSHIP – CALP.

Solymossy, E. a. (2000). *Sustainable growth for the small business: a theory of organizational transition.* Illinois:: Western Illinois University.

Sørensen, B. E. (2005, March 1). Cointegration. *ECONOMICS 266, Spring, 1997*, p. 12.

Stockwell, I. (2008). *Introduction to Correlation and Regression Analysis.* Baltimore, MD: CHPDM/UMBC.

Sykes, A. O. (2000). "An Introduction to Regression Analysis.". *Chicago Lectures in Law &*, 46-54.

Syla, S. (2015). Role of MSMEs in the Growth of Indian Economy; Global Journal of Commerce and management Perspective. *Global Institute for Research and education*, 43.

Takayama, H., Hashimoto, N.D. U. (1984). Spatial and temporal price and allocation modeling: Some extensions. *Socio-Economic Planning Sciences, Volume 18, Issue 4*, 227-234.

Taru, V. B. (2017). Market Integration and Price Transmission among Rural and Urban Markets of Selected Cereals in North-Eastern Nigeria. *International Journal of Advanced Research in Social Sciences, Environmental Studies & Technology |*, 2536-6505.

The World Bank. (1985). *Ethiopia: Industrial Sector Review.* Washington, DC: The World Bank.

The World Bank. (2010). *World Development Indicators.* Washington, DC: The World Bank.

Tsoulouhas, T. C. (1992). A New Look at demographic and technological change England. *Explorations in Economic History(29)* , 169 - 203.

UNIDO. (1991). *Ethiopia: New Directions of Industrial Policy.* Vienna: UNIDO Regional and Country Branch: Industrial Development Review Series.

United Nations Industrial Development Organization, U. (1991). *Ethiopia: New Directions of Industrial Policy.* Vienna: UNIDO Regional and Country Branch:Industrial Development Review Series.

University of Florida. (2022, March 12). *Statistics*. Retrieved from College of Liberal Arts and Sciences: https://stat.ufl.edu/resources/

Vandenberg, P. (2009). *Micro, small and medium-sized enterprises, and the global economic crisis: Impacts and policy responses.* ILO.

WFP. (2007). *Market Analysis Tool : Market Integration.* Rome: WFP.

WFP. (2007). *Market Integration Tool: Market Integration.* Rome: WFP.

WFP. (2007). *PDPE Market Analysis Tools: Market Integration.* Washington DC: WEP.

Will Kenton. (2022, March 28). *Statistical Significance*. Retrieved from Investopedia.com : https://www.investopedia.com/terms/s/statistically_significant.asp